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TRANSMITTAL FORM

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Application Number	09/500,624
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First Named Inventor	Dean W. Amburn
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Examiner Name	Harish T. Dass
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ENCLOSURES *(check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment / Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/ Incomplete Application
  - ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
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- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
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- ☐ After Allowance Communication to Technology Center (TC)
- ☒ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
- ☐ Status Letter
- ☒ Other Enclosure(s) *(please identify below)*:

  Response to Notification of Non-Compliant Appeal Brief; return postcard.

Remarks The Commissioner is hereby authorized to charge any additional fees that may be required under 37 CFR 1.16 or 1.17 to Deposit Account No. 08-0750. A duplicate copy of this sheet is enclosed.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm *or* Individual name	Harness, Dickey & Pierce, P.L.C.	Attorney Name DEAN W. AMBURN	Reg. No. 46,517
Signature			
Date	August 12, 2005		

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.:	09/500,624
Filing Date:	February 9, 2000
Applicant:	Dean Amburn
Group Art Unit:	3628
Examiner:	Harish T. Dass
Title:	Method And Apparatus For Automated Trading of Equity Securities Using A Real Time Data Analysis
Attorney Docket:	2425-000001

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF

Sir:

Pursuant to the Notification of Non-Compliant Appeal Brief dated July 19, 2005, Applicant is submitting an amended brief on behalf of Appellant that conforms with the requirements of 37 C.F.R. § 41.37(c).

Respectfully submitted,

Dated: 8/12/2005

By: _____
Dean W. Amburn
Reg. No. 46,517

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. Box 828
Bloomfield Hills, Michigan 48303
(248) 641-1600

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appeal No.: _____

Application No.:	09/500,624
Filing Date:	February 9, 2000
Applicant:	Dean W. Amburn
Group Art Unit:	3628
Examiner:	Harish T. Dass
Title:	Method And Apparatus For Automated Trading of Equity Securities Using A Real Time Data Analysis
Attorney Docket:	2425-000001

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
Mail Stop: Appeal Brief-Patents

AMENDED BRIEF ON BEHALF OF APPELLANT

This is an appeal from the action of the Examiner dated December 16, 2004, finally rejecting claims 30-33, 35 and 37-46 of the present application. Copies of the appealed claims are attached as an appendix.

TABLE OF CONTENTS

I. Real Party In Interest

The real party in interest is Dean W. Amburn, the inventor.

II. Related Appeals and Interferences

There are no known related appeals, interferences or judicial proceedings which may be related to or will directly affect or be directly affected by or otherwise have a bearing on the Board's decision in the pending appeal.

III. Status Of The Claims

Claims 1-46 are pending in this application. Claims 1-29, 34 and 36 are withdrawn from consideration. Claims 30-33, 35 and 37-46 stand rejected and are appealed.

IV. Status Of Amendments

No amendments have been filed subsequent to the December 16, 2004 Final Office Action.

V. Summary of the Claimed Subject Matter

Applicant's invention is directed generally to a method and system for computer-implemented automated buying and selling a security based on a user defined decision model where the user defined decision model receives a continuous stream of data and

makes a decision to buy or sell the security on a continuing basis until the process is stopped.[1]

As described in applicant's specification the method and system of the invention allows for security traders to define decision models to determine when to buy and sell the security.[2] The method and system allows a trader, for example, a day trader, to custom design a decision model for buying and selling a security. In practical application, it would be desired to define a decision model that buys a security while a wave of momentum carries the security price higher and then sell the security when the momentum ends or other factors come into play.

The client defined decision model receives data for example, real-time security data and possibly market data. As explained in the specification the security data could include the real-time data available for a security during market hours including price, bids, asks, spread, market maker information including their current bids/asks and other information. The decision model provides a result based on the data which is then compared to a decision point to decide whether to buy or sell. Data is continuously fed into the decision model.[3]

An important advantage of the invention is the ability of the user to design decision models based on the user's own determination of how best to decide whether to buy and/or sell a security. In other words, the user has ultimate control in designing and implementing the decision model. The construction of the decision model is only limited by the user's imagination and willingness to take risk.

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[1] See Substitute Specification paras. [0014] to [0022] and [0045] to [0108] with reference to Figs. 1-11.
[2] See Substitute Specification paras. [0047] to [0069].
[3] See Substitute Specification paras. [0041] to [0047], [0079] to [0082].

Another advantage of the invention is the ability to buy and sell the security rather than just buy the security and manually enter an order to sell. Importantly, this allows buy and sell transactions of the security to be repeated multiple times. This is consistent with attempting to follow momentum of the security which can fluctuate throughout the trading day. In other words a trader can initiate the system with the decision model in place and it will buy and sell the security repeatedly until stopped.

As an example, a user-defined decision model could be based on whether one moving average of security data is greater than another moving average. For example, one moving average could be based on an average of the inside bid over a shorter period and another moving average could be based on an average of the inside bid over a longer period. Further to this example consider the following expression:

If f(Comp-1) $\geq f$(Comp-2) then BUY (the security)[4]

In this example, the functions of Comp-1 and Comp-2 are compared. This could be comparison of the two moving averages where the moving averages are defined by the user. Further, the moving averages receive data and are constantly changing based on the dynamic nature of the data. Thus, the user is able to establish a dynamic relationship between data for a security and a decision to buy the security.

This is intended to be a simple illustrative example of how the method and system may work in accordance with the invention. It is anticipated and intended that users would develop much more complex decision models that take into account many factors in the decision process where the factors can be defined in terms of a mathematical

[4] *See* Substitute Specification, para. [0090] and related paragraphs together with reference to Figs. 5-6.

function of data and where the functions receive data and continuously provide results that are considered in a decision to buy or sell.

Applicant's specification provides detail about preferred embodiments of the invention. This includes an illustration and description of the overall system and examples similar to the example described above. (See Substitute Specification paragraphs [0035] to [0107] in relation to Figures 1-11).

VI. Grounds of Rejection to be Reviewed on Appeal

A. Claims 30 and 44-46 stand rejected as allegedly unpatentable over Lupien (U.S. 5,845,266) in view of Tertitski (U.S. 6,493,681), pursuant to 35 U.S.C. § 103(a).

B. Claims 31-33 stand rejected as allegedly unpatentable over Lupien in view of Tertitski, and further in view of Kane (U.S. 6,317,728), pursuant to 35 U.S.C. § 103(a).

C. Claims 35 and 37-43 stand rejected as allegedly unpatentable over Lupien in view of Kane and Buist (U.S. 6,408,282), pursuant to 35 U.S.C. § 103(a).

VII. Arguments

A. Claims 30 and 44-46 are not rendered obvious by Lupien (U.S. 5,845,266) in view of Tertitski (U.S. 6,493,681)

1. Introduction of why claims 30 and 44-46 are patentable over Lupien and Tertitski

Lupien and Tertitski in combination or individually simply do not teach or suggest the elements of claims 30 and 44-46. In fact both references are easily distinguishable as directed to entirely different systems and are non-analogous to the

automated trading system of the invention. As will be explained in greater detail throughout this discussion, the elements of all the claims under appeal are not taught or suggested by the cited references.

Claims 30 and 44-46 do contain patentable subject matter. Claim 30 is directed to a method for trading a security through a network accessible brokerage comprising:

> "receiving from a client of the network accessible brokerage at least one computer implemented decision model for the security wherein the decision model comprises a mathematical function for receiving data and providing at least one value wherein the at least one value is compared to a decision point for deciding to buy or sell the security."

Claim 44 is directed to "An automated trading system for trading securities through an network accessible brokerage" has similar language. This claim language describes receiving from a client a decision model that comprises a mathematical function that receives data and provides a value that is compared to a decision point. This is contrasted with traditional trading systems where a client submits a value, for example, a value representing the price that the client is willing to pay for a security. This language also distinguishes a "network accessible brokerage" from a security market itself, wherein the actual buying and selling of the security takes place.

The method of the invention as described in claims 30 and 44 advantageously allows for a client to define in the form of a mathematical function a decision model that will determine whether to buy or sell a security. The client submits the decision model to the network accessible brokerage for monitoring and directing the automated buying and

selling of the security. This method and system allows the client to define buying and selling as a dynamic relationship based on a function of data. This dynamic relationship is different from a direct relationship, for example a decision to buy if a security reaches a certain price. In a direct relationship the client may indicate a willingness to buy or sell only if a security reaches a certain price (or is less than a certain price) but otherwise there is no possibility of a transaction.

The ability to define a dynamic relationship through a mathematical function allows a client the opportunity to design their own decision model and implement creative and novel ideas in how security transactions will be made. A dynamic relationship allows for developing a decision model for both buying and selling the security. The method of the invention is therefore distinguishable from any system that dictates buying or selling based on a direct (rather than dynamic) relationship between the decision model and the deciding factor. The method of the invention is also fundamentally distinguishable from any system that does not first automatically buy and then automatically sell a security based on the decision model.

In addition to submission of a decision model comprising a mathematical function claim 30 provides for:

"inputting data into the decision model;

computer implemented monitoring the decision model for the decision to buy the security wherein monitoring the decision model comprises comparing the at least one value to the decision point;

in response to monitoring said decision model, automatically generating a buy transaction order for the security; and

automatically transmitting the buy transaction order to a market computer;

after the step of transmitting the buy transaction, monitoring the decision model;

in response to monitoring said decision model, automatically generating a sell transaction order for the security; and

automatically transmitting the sell transaction order to the market computer."

Thus, claim 30 (and similarly claim 44) provides for buying and selling the security with a market computer based on a monitoring of the decision model as data is input into it. This is fundamentally different from the teaching of the cited references.

2. Lupien does not teach or suggest a method for trading a security wherein a client is offered the opportunity to submit a mathematical function as a decision model

Lupien does not teach or suggest a method for trading where a client is offered the opportunity to submit into the system a mathematical function as a decision model that defines a dynamic relationship between data and the decision to buy/sell. For this reason alone, among others as will be explained, the rejection of claims 30-33 and 44-66 should be withdrawn.

Regarding claim 30 the Examiner states that "Lupien discloses receiving from a client of the network accessible brokerage at least one computer implemented decision model (satisfaction density) for the security wherein the decision model comprises a mathematical function for receiving data and providing at least one value wherein the at least one value is compared to a decision point for deciding to buy or sell the security, and inputting data into the decision model." (See Office Action dated December 16, 2004, hereinafter "OA", page 2, lines 13-18). The Examiner cites the "entire document" and including several sections of Lupien in support of this statement.

The Examiner provides no further guidance on how Lupien purportedly discloses each of these elements. For example, there is no explanation about specifically how Lupien has a decision model comprising a mathematical function or how the mathematical function receives data. By citing the "entire document" the Examiner avoids providing important, necessary detail backing up the Examiner's claims. The failure to provide specific support for the Examiner's statements makes it difficult to respond.

However, Lupien simply does not teach or suggest the method or system as claimed. Specifically, Lupien does not teach or suggest a method for trading a security through a network accessible brokerage since Lupien is directed to a "crossing network" that matches buy and sell orders based upon a satisfaction in quantity profile. Second, Lupien does not teach or suggest inputting data into a decision model after it has been received from a client even assuming for the sake of argument that the satisfaction density profile of Lupien is a decision model.

The Examiner cites Lupien, Col. 4, lines 19-36 as one of several sections cited in support of his statement. This section of Lupien, however, would support that Lupien is directed to a market not a brokerage and that the satisfaction density profile does not receive inputted data and is not a decision model comprising a mathematical function. This section of Lupien provides:

> "once the satisfaction density profile is complete, the trader crosses the satisfaction density profile to be transmitted to a central matching controller ('CMC') which anonymously matches buy and sell orders as discussed below. For the purpose of explanation, assume a batch process in which multiple traders enter satisfaction density profiles that represent either **buy or sell orders for a particular stock**. Upon transmission of a satisfaction density profile to the CMC, the CMC will cause both buy profiles to be stored in a buy profile database and sell profiles to be stored in a sell profile database. The CMC will then calculate for every buyer/seller profile pair, a mutual satisfaction cross product profile." Lupien at Col. 4, lines 24-36.

By calculating a buyer/seller profile pair for matching buyers and sellers clearly Lupien discloses a security market and not a brokerage to facilitate the sale with a security market. In Lupien there is no need to transmit a buy/sell order to a market computer since the system in Lupien is the market.

Further, in Lupien there is no inputting of data into the satisfaction density profile (i.e. the alleged decision model). According to Lupien price and quantity information is initially input into the satisfaction density profile and it is submitted for comparison to other

satisfaction density profiles. Further, the "CMC will then calculate for every buyer/seller profile pair, a mutual satisfaction cross product profile." See Lupien at Col. 4, lines 35-36.

In Lupien the satisfaction density profile contains price and volume values of a buyer to compare with price and volume values of a seller. Price and volume data is not a mathematical function. In Lupien there is no mathematical function (i.e. decision model) for inputting data into.

3. Lupien does not teach or suggest monitoring a decision model, generating a transaction order or transmitting the order to a market computer

The Examiner further states that Lupien discloses "in response to monitoring said decision model, automatically generating a buy transaction order, and automatically transmitting the buy transaction order to the market computer." (See OA, page 2, lines 19-21). Lupien in fact does not teach or suggest this.

In particular, there is no monitoring of a decision model (i.e., the satisfaction density profile) nor is an order to buy automatically generated based on monitoring the decision model, nor is a buy transaction order transmitted to a market computer. As indicated in the previously quoted section of Lupien the satisfaction density profiles are transmitted to a central matching controller ("CMC") where the "buy/sell orders represented by the ranked grid values of the mutual satisfaction cross products are then matched in order, and matching trades are aggregated by the CMC system. The matching process then continues down the ranked list." Lupien at Col. 4, lines 41-46.

"Monitoring" as applied to the invention in claim 30 means that data is input into the client provided decision model comprising a mathematical function on a continuous

basis thus the result of the mathematical function is continuously changing and the decision model requires monitoring for a decision to buy or sell.

Clearly, the "matching" of Lupien is different from monitoring. The "matching" of Lupien is also different from generating a transaction order or transmitting the transaction order to a market computer. The "matching" of Lupien fundamentally distinguishes Lupien from claims 30 and 44. Therefore, in Lupien there is no monitoring of the satisfaction density profile and there is no generation of a sell transaction order or transmission of a sell transaction order to a market computer.

4. Tertitski does not teach or suggest monitoring the decision model

The Examiner admits that Lupien does not "explicitly disclose computer implanted monitoring the decision model for the decision to buy the security wherein the monitoring the decision model comprises comparing the at least one value to the decision point." (See OA, page 3, lines 2-5). However, the Examiner states that Tertitski discloses these steps. The Examiner provides no detail regarding what in Tertitski is the decision model or how the decision model is monitored or how it comprises comparing at least one value to a decision point. Regardless, Tertitski does not teach or suggest this.

Tertitski is directed to "a system and method for generation of strategies of investment . . .." *See* Tertitski abstract. Tertitski does not appear to teach or suggest any form of a system for trading securities, rather, it is directed to a category of systems that recommends strategies. For this reason, Tertitski is fundamentally distinguishable and non-analogous art to the invention.

In Tertitski "the system calculates capital gains for different strategies in the form of a strategy matrix 3 using the historical stock data over a period of analysis." See Tertitski at Col. 3, lines 22-24. While Tertitski also discloses various formulas used in generating a recommendation, there is no teaching or suggestion that any of these formulas could be modified or more importantly that these formulas are provided by the system user. Further, there is no teaching or suggestion of automatically placing an order based on a decision model. For these reasons, clearly Tertitski does not teach or suggest computer implemented monitoring a client submitted decision model. Nor does Tertitski teach or suggest any of the steps of claim 30.

5. The combination of Lupien and Tertitski does not establish a *prima facie* case of obviousness

The Examiner next states that it would have been obvious to one skilled in the art at the time the Applicant's invention was made to "modify the disclosure of Lupien and include monitoring, decision model for decision to buy securities and comparison, as disclosed by Tertitski, to provide buy, sell or hold recommendation of securities." (See OA, page 3, lines 9-11). There are several reasons why this combination does not establish a *prima facie* case of obviousness.

First, neither Lupien nor Tertitski either individually or in combination teach or suggest all of the limitations of claims 30 or 44. For example, neither Lupien nor Tertitski teach or suggest "receiving from a client of the network accessible brokerage at least one computer implemented decision model for the security wherein the decision model comprises a mathematical function for receiving data and providing at least one value wherein the at least one value is compared to a decision point for deciding to buy or sell

the security." (See claim 30). Nor does Lupien or Tertitski teach or suggest monitoring a decision model or submitting an order to a market computer. More fundamentally, neither teach nor suggest a system that prepares an order to buy a security and an order to sell the same security based on the decision model.

Further, the Examiner never explains exactly what in Tertitski is combined with what in Lupien to purportedly create the invention. This is one of the requirements to establish a *prima facie* case of obviousness.

In addition, no substantive reason is provided for combining the references. This is a requirement according to the Court of Appeals for the Federal Circuit (CAFC), as held in *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) ("The range of sources available, however, does not diminish the requirement for actual evidence. That is, the showing must be clear and particular. Broad conclusory statements regarding the teachings of multiple references, standing alone are not 'evidence'") and *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000).

Both of these cases set forth very rigorous requirements for establishing a *prima facie* case of obviousness under 35 U.S.C. § 103(a). To establish obviousness based on a combination of elements disclosed in the prior art, there must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the applicant. The motivation, suggestion or teaching may come explicitly from one of the following: (a) the statements in the prior art (patents themselves), (b) the

knowledge of one of ordinary skill in the art, or in some cases, (c) the nature of the problem to be solved. See *Dembiczak* 50 USPQ at 1614 (Fed. Cir. 1999).

In *Kotzab*, the CAFC held that even though various elements of the claimed invention were present (in two separate embodiments of the same prior art reference), there was no motivation to combine the elements from the separate embodiments, based on the teaching in the prior art.

In order to establish a *prima facie* case of obviousness under 35 U.S.C. § 103(a), the Examiner must provide particular findings as to why the two pieces of prior art are combinable. See *Dembiczak* 50 USPQ2d at 1617. Broad conclusory statements standing alone are not "evidence."

The Examiner's purported motivation for combining Lupien with Tertitski is "to provide buy, sell or hold recommendation of securities." This is inapposite to the invention where the purpose is to automate trading (buying and selling) of a security based on a user defined decision model.

Further, this is not explicitly suggested in Lupien or Tertitski and is not necessarily common knowledge in the art, and does not result from the nature of any problem to be solved.

In addition, the Examiner does not establish the specific understanding or principle within the knowledge of the skilled artisan that would have provided motivation to change the satisfaction density profile of Lupien into the system of Tertitski. There would be no motivation to make such a modification since the intended benefit of the crossing network of Lupien is lost as a result of this proposed change.

According to Lupien its invention:

"**provides a richer means of price discovery than is available in any existing market structure, including exchanges**. In steady-state operation, where all feasible matches have been performed and the system is awaiting the next profile input, there will exist a group of unfilled buy satisfaction density profiles and a group of unfilled sell satisfaction density profiles, with no overlap between the two groups (otherwise a match would be performed). The two-dimensional price/size region between these groups is denoted the 'spread region,' and depicts, at each value of size, the spread between the highest non-zero buy satisfaction profile price and the lowest non-zero sell satisfaction profile price. This depiction of the aggregate of unfilled satisfaction profiles is a significant generalization of the market quotes currently provided by exchanges and market makers, and obviates the need for parasitic pricing inherent in other crossing networks. It also provides substantially greater price discovery across the full range of trade size than is contained in the current quotations of best-bid and best-offering prices and corresponding sized." (emphasis added) Lupien at col. 5, lines 5-25.

Clearly the satisfaction density profile of Lupien is central to providing the desired functionality of price discovery in the crossing network. There would be no motivation or desire to one skilled in the art to change the satisfaction density profile of Lupien into the

buy/sell recommendation of Tertitski since there would be no ability for display of a price/size region between buyers and sellers as advantageously suggested in Lupien.

In fact, in Lupien the intended fundamental function as a crossing network would be lost as a result of the Examiner's suggested modification. In a crossing network buyers and sellers are matched based on criteria (e.g. price and number of shares) that each trader is willing to enter into a trade for a particular security. Conversely the system of Tertitski suggests strategy recommendations based on formulas but does not issue buy or sell orders. Therefore, the crossing network of Lupien would lose its functionality as a crossing network if modified to replace the satisfaction density profiles with the strategy recommendations of Tertitski. Therefore, the Examiner's suggested modification would change the principle of operation of Lupien and result in an unworkable third system.

Accordingly, Applicant respectfully submits that claims 30 and 44-46 are allowable for at least the above reasons, including that examiner has failed to establish a proper *prima facie* case of obviousness under 35 U.S.C. 103(a) in view of *Dembiczak* and *Kotzab*.

6. The Examiner relies on impermissible hindsight reconstruction to reject the claims

Further, Appellant submits that combining the teachings of Lupien with the teachings of Tertitski uses impermissible hindsight reconstruction to reject the claims. The Examiner has used the present application as a blueprint, selected a prior art vehicle in Lupien as the purported main source, and then attempted (unsuccessfully) to search other prior art for the missing elements, without identifying or discussing any specific

evidence of motivation to combine, other than providing conclusory statements regarding the knowledge in the art, motivation and obviousness.

The CAFC has noted that the USPTO and the courts "cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention," and that the best defense against hindsight-based obviousness analysis is the rigorous application of the requirement for a showing of a teaching or motivation to combine the prior art references. *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1596 (Fed. Cir. 1988). Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability--the essence of hindsight. *Dembiczak*, 50 USPQ2d at 1617. **The Examiner's use of hindsight reconstruction is consistent throughout all the rejections appealed**.

7. Claims 44-46 contain patentable subject matter

Regarding claims 44-46 the Examiner states that Lupien discloses a decision model "wherein the at least one decision model **enters a state comprising a buy state and a sell state** ... (emphasis added)."[5] Unlike claim 44 the satisfaction density profile of Lupien (i.e. the alleged decision model) does not comprise logic for buying **and** selling the security. In Lupien there is either a buy satisfaction density profile or a sell satisfaction density profile for a particular security. In Lupien "multiple traders enter satisfaction

[5] In an Office Action mailed March 26, 2004 the Examiner alleged that Lupien disclosed that its purported decision model comprised "logic for buying and to buy [sic] or sell a security..." The Examiner decision to eliminate this language is a telling concession that Lupien does not have this element as required by claim 44.

density profiles that represent either **buy or sell orders for a particular stock**." Lupien, Col. 4, lines 30-31.

Nor does the satisfaction density profile of Lupien enter a state including a buy state or a sell state. In Lupien a match is made and trades result. Also there is no data input into the satisfaction density profile after it is submitted for matching with other satisfaction density profiles. For these reasons together with the reasons previously discussed neither Lupien nor Tertitski individually or in combination teach or suggest the invention of claims 44-46. As also discussed the combination of Lupien and Tertitski does not establish a *prima facie* case of obviousness.

B. Claims 31-33 are <u>not</u> rendered obvious by Lupien and Tertitski, as applied to claim 30 (discussed above), and further in view of Kane (U.S. 6,317,728)

1. Lupien does not disclose canceling an order to sell based on monitoring a decision model since in Lupien admittedly there is no monitoring

Regarding claims 31-33 the Examiner states that "Lupien discloses canceling the sell order if the decision model indicates a trade is undesirable." (See OA, page 5, lines 4-5). Lupien does not teach or suggest this. The sections of Lupien cited by the examiner including column 11, lines 1-22 and column 19, lines 22-40 say nothing about canceling a sell order if the satisfaction density profile (i.e. the alleged decision model) indicates a trade is undesirable. In Lupien there is no opportunity to cancel an order based on a decision model because as previously stated in Lupien "buy/sell orders represented by the ranked grid values of the mutual satisfaction cross products are then

matched in order, and matching trades are aggregated by the CMC system." Lupien at col. 4, lines 24-46. In Lupien once the buy/sell orders are matched a trade is effectively made. As the Examiner has admitted Lupien does not teach or suggest the step of monitoring a decision model. Since there is no monitoring of a decision model there cannot be canceling of an order based on (monitoring) a decision model.

2. The Examiner does not provide any support for the allegation that initiating a floating stop loss in a an automating trading system as described in claim 30 is "known"

Regarding claims 32 and 33 **the examiner admits that Lupien does <u>not</u> teach or suggest:**

> "wherein the step of generating a transaction order comprises after the step of generating a sell order, monitoring the sell order until the order is filled, monitoring the decision model, after the step of transmitting the buy transaction order to the market computer, confirming the buy transaction, initiating a floating loss, and monitoring the floating stop loss for a stop loss decision to sell the security, and if a stop loss decision to sell is reached then automatically transmitting a stop loss sell transaction order for the security to the market computer, and floating stop loss comprises a dynamic stop loss." (See OA, page 5, lines 5-13).

The Examiner then alleges that "after the step of transmitting the buy transaction order to the market computer and confirming the buy transaction, initiating a floating loss **<u>are known</u>**." (See OA, page 5, lines 13-14). The **Examiner fails to provide any support for this allegation**. It is asserted by the Applicant that it is not commonly known

to have an automated trading system as described in claim 30 confirm a transaction and then automatically initiate a floating stop loss process. The Examiners unsupported statement fails to establish a *prima facie* case of obviousness.

3. Tertitski does not disclose monitoring a decision model, monitoring a floating stop loss, or sending an order to sell to a market computer

The Examiner states that Tertitski "discloses monitoring the decision model, monitoring the floating stop loss for a stop loss decision to sell the security, and if a stop loss decision to sell is reached then automatically transmitting a stop loss sell transaction order for the security to the market computer ..." (See OA page 5, line 15) Tertitski does not teach or suggest this.

As already discussed, Tertitski is directed to using provided formulas for calculating capital gains for different strategies. There is no monitoring of a decision model since data is input into the provided formulas and a strategy recommendation is made. "Monitoring" as applied to the invention in claim 30 means that data is input into the client provided decision model comprising a mathematical function on a continuous basis thus the result of the mathematical function is continuously changing and requires monitoring for a decision to buy or sell.

Further, Tertitski says nothing about a floating stop loss. Again, there is no need for a floating stop loss in Tertitski since Tertitski discloses making recommendations but does not disclose submission of orders to a market much less a market computer.

4. Kane does not disclose monitoring an order until it is filled or initiating a dynamic stop loss

The Examiner states that Kane discloses "monitoring the sell order until the order is filled and floating stop loss comprises a dynamic (continuously) stop loss ..." (See OA page 5, line 21 to page 22, line 2). Kane does not teach or suggest this. Kane discloses nothing about monitoring an order once placed. Further, a floating stop loss and dynamic floating stop loss as described in the specification[6] does not exist in the disclosure of Kane. A "stop loss" is different from a "floating stop loss" or a "dynamic floating stop loss" as explained in the specification.

5. The combination of Lupien, Tertitski and Kane does not establish a *prima facie* case of obviousness

The Examiner states that it would have been obvious to "modify the disclosure of Lupien and include step of generating order and monitoring the decision model, monitoring the floating stop loss, as disclosed by Tertitski and Kane, to trade securities based of sound decision model and rules." (See OA page 6, lines 3-7). As already stated, in Lupien there is no need to monitor a decision model since the "matching" of buy/sell orders is the transaction. For these reasons and the reasons already discussed neither Lupien nor Tertitski nor Kane individually or in combination teach or suggest the invention of claims 31-33.

Further, the Examiner's generalized conclusion does not provide the necessary specificity as to a basis for the motivation to combine the references. As a result the combination of Lupien, Tertitski and Kane does not establish a *prima facie* case of obviousness. It again appears that the Examiner is relying on impermissible hindsight in an unsuccessful attempt to cobble together elements of the rejected claims.

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[6] See Substitute Specification para. [0101] to [0104] with reference to Fig. 10.

In addition, the combined system of Lupien, Tertitski and Kane would not work. The resulting system would not function since Lupien, Tertitski and Kane are disparate systems with divergent purposes that do not logically combine to create a fourth system.

Finally, as already discussed the primary reference, Lupien is directed to a crossing network based on price and volume. Its stated advantages would be lost based on the attempted combination. As a result the combination of Lupien, Tertitski and Kane does not establish a *prima facie* case of obviousness.

C. Claims 35 and 37-43 are <u>not</u> rendered obvious by Lupien in view of Kane and Buist (U.S. 6,408,282)

1. Lupien does not teach or suggest the steps of claim 35

Regarding claim 35 the Examiner states that Lupien "discloses receiving at least one computer implemented buy decision model for the security, and receiving at least one computer implemented sell decision model for the security, and providing a computer implemented monitoring process for monitoring (observing) the decision models for a buy decision and/or a sell decision ..." (See OA, page 6, lines 10-14). Lupien does not teach or suggest this. In Lupien there is no suggestion or motivation to prepare both a buy satisfaction density profile and a sell satisfaction density profile for the <u>same security</u> and initiate a matching of the satisfaction density profiles. This is an inherent limitation to Lupien since in the matching process when buy profiles are matched with sell profiles an investor could be buying and selling the security with himself. In Lupien, "multiple traders enter satisfaction density profiles that represent either buy or sell orders for a particular stock." Lupien, Col. 4, lines 30-31.

Nor does Lupien teach or suggest a transaction approval process as stated by the Examiner. The Examiner's basis for this remark is the presence in Lupien's abstract of a reference to accommodating stock exchange rules. However, accommodating stock exchange rules is not explained in Lupien as included in an approval process before a trade is made. Nor is it suggested as a step taken after indication of a transaction by a decision model to approve of the transaction before it is entered into.

Nor does Lupien teach or suggest a computer implemented transaction submission process for submitting a transaction to buy or sell the security to a market computer as stated by the Examiner. In Lupien the crossing network system itself is the market.

Nor does Lupien teach or suggest inputting data into the decision model. The decision model of Lupien, according to the Examiner, is the satisfaction density profile. The satisfaction density profile once created does not accept data. Instead it is an "order" that is matched with other orders in other satisfaction density profiles. In Lupien there is no inputting of data into the decision model.

Nor does Lupien teach or suggest submitting an order to buy/sell based on a buy/sell decision of a decision model. In Lupien the buy/sell orders contained in satisfaction density profiles are matched resulting in a transaction.

Nor does Lupien teach or suggest continuing inputting data into the decision model (i.e. satisfaction density profile). Again, the buy/sell orders in the satisfaction density profile of Lupien are matched resulting in transactions. There is no continuing inputting data into the satisfaction density profile after it is matched.

Nor does Lupien teach or suggest repeating the steps of inputting data and monitoring a decision model if a buy decision is reached or a sell decision is reached. First, as already discussed Lupien does not teach or suggest that the satisfaction density profile is for buying and selling the security. Second, in Lupien once the satisfaction density profile is satisfied by matching it with another satisfaction density profile the process stops. There is no repeating of the process steps.

2. Kane does not teach or suggest the steps of claim 35

The Examiner states that Kane discloses what is not disclosed by Lupien including "providing a computer implemented transaction approval process on the brokerage computer system." (See OA, page 8, lines 4-5). The Examiner refers to "Fig.1 device connected to # 20" in support. (See OA, page 8, lines 5-6). However, Fig. 1 of Kane does not have an item no. 20. Notwithstanding, in Kane a transaction order is sent to a brokerage, for example E-Trade to be filled. This means that the system of Kane does not exist on a brokerage computer system. Instead the system of Kane appears to communicate with a brokerage computer system.

3. Buist does not teach or suggest the steps of claim 35

Buist does not teach or suggest the process of claim 35 for "automated trading of a security through a brokerage computer system in communication with a client computer system." In fact, Buist fails to disclose any form of an automated trading system or process. Instead, Buist is directed to and discloses a trading system that does not automatically prepare and automatically submit an order to buy or sell a security to a market computer based upon logic in a decision model. In Buist it appears that operator

intervention is required in deciding if a trade is desirable and/or in placing the order. For example, Buist discloses a user viewing a final verification screen and selecting a "send" button to transmit the order. Buist at Col. 9, lines 62-67. Buist teaches none of the steps of claim 35.

4. The Examiner's statements regarding what is "known" are unsupported and inapposite to the steps of claim 35

The Examiner states that "It is known that the broker's job is to monitor the market whether it is in person or computerized monitoring tools to watch the trend." (See OA, page 9, lines 1-3). The Examiner provides no support for this statement. Claim 35 requires providing a "**computer implemented monitoring process** on the brokerage computer system for monitoring the decision models for a buy decision and/or a sell decision." Claim 35 also provides for "monitoring the decision models through the monitoring process for the buy decision and/or the sell decision." Therefore, to the extent that brokers would monitor securities on a computer does not mean that there is a computer implemented monitoring process. Nor does it have anything to do with monitoring a buy and sell decision model submitted through a client computer system to a brokerage computer system.

5. The combination of Lupien, Kane and Buist fails to establish a *prima facie* case obviousness

The Examiner states that it would have been obvious to modify the disclosure of Lupien and "include monitoring the decision models through brokerage network, and describe the system architect of on-line (Internet or day-trading) as discloses by Kane and Buist, to provide system view and system monitoring capability using user interface

(GUI) or automatic evaluating decision logic to monitor a portfolio of stocks in real time which can shield an investor from loss while maximizing gain." (See OA, page 9, lines 6-12).

There are several reasons why this combination does not establish a *prima facie* case of obviousness. Several of these reasons have already been discussed herein. Adding Buist does not change the previously discussed fundamental flaws with the proposed combination.

The proposed combination does not teach or suggest all of the limitations of claim 35. Second, the Examiner does not explain the motivation for making this combination. The Examiner's statement above does not make sense and is inapposite to the problem solved by the invention of automated buying and selling a security based on a decision model comprising a mathematical function. Third, the Examiner relies upon impermissible hindsight. Fourth, the proposed combination would not function as implied by the examiner. The resulting combination would render the system disclosed in Lupien unfit for its stated purpose of providing for a matching of buyers and sellers while allowing for price discovery. See Lupien col. 5, lines 5-25.

6. The Examiner fails to establish a *prima facie* case of obviousness for claim 37

Regarding claim 37 all of the above stated reasons support distinguishing the cited references and explain why a *prima facie* case of obviousness is not supported. Claim 37 stands in its own right as patentable on the basis that it requires "inputting data into the one or more decision models until the process is stopped" and "iteratively repeating steps" including "monitoring the one or more decision models using the monitoring

process, for the decision to buy and/or the decision to sell;" and "if the decision to buy or the decision to sell is reached then determining using the transaction approval process if a buy or sell transaction is appropriate and is so then automatically submitting using the transaction submission process an order to buy or sell the security." None of the cited references teach or suggest these steps either individually or in combination. Therefore, reconsideration and withdrawal of the rejection of claim 37 is requested.

7. The Examiner fails to establish a *prima facie* case of obviousness for claims 38-39

Regarding claims 38-39 the Examiner states that Lupien discloses that "the decision model comprises a moving average calculation of at least a portion of the data ... and wherein the decision model comprises a weighted data process." (See OA, page 11, lines 12-15). The Examiner cites col. 2, lines 62-67 and col. 23, lines 1-20 of Lupien in support of this statement. However, the discussion in Lupien regarding averaging and weighting does not state that any averaging or weighting is part of the satisfaction density profile (i.e. the purported decision model) as provided by the client. Lupien does not disclose a decision model comprising a moving average or a weighted data process as claimed.[7] Therefore, reconsideration and withdrawal of the rejections of claims 38-39 is requested.

8. Neither Lupien nor Kane teach or suggest a floating stop loss or a dynamic floating stop loss and the Examiner fails to establish a *prima facie* case of obviousness for claims 40-43

[7] See Substitute Specification paras. [0048] to [0096] for discussion of moving average and weighted data process.

Regarding claims 40-43 the Examiner states that Kane discloses automatically initiating a floating stop loss process for selling the security wherein either the floating stop loss process or the decision model can reach a decision to sell the security, and wherein the stop loss is a dynamic floating stop loss. Kane does not teach or suggest this functionality as part of the trading system disclosed in Kane. As already discussed, the floating stop loss as described in the specification is different from a traditional stop loss. Further, a dynamic stop loss also differs from a traditional stop loss as described in the specification. By calling it "dynamic" the stop loss is meant to be changing, not "monitoring stocks continuously" as stated by the examiner. Therefore, reconsideration and withdrawal of the rejections of claims 40-43 is requested.

D. The Examiner did not clearly set out the basis for the rejections and did not precisely identify the alleged similarities and differences between the claimed subject matter and the alleged prior art

The Examiner relies on the Lupien, Tertitski, Kane and Buist references in support of the 35 U.S.C. § 103(a) rejections. For each of these references the Examiner makes very broad generalized statements regarding the reference's teachings. With only a few exceptions the Examiner does not specifically identify the language in the reference that is relied upon in support of statements made in the office action. Instead, the Examiner refers to the entire reference or several large sections of text. This denies the Applicant the opportunity to confront the support backing up the Examiner's statements especially when the Applicant has read each of the references repeatedly and cannot find any support for many of the statements made by the Examiner.

Moreover, Applicant has challenged the Examiner to provide additional detail in responding to earlier office actions where the same reference was cited. For example, the Examiner has cited Lupien in several earlier office actions. In responding Applicant has stated that Lupien does not contain the teachings as asserted by the Examiner. Rather than confront the Applicant with specific support in subsequent office actions the Examiner simply makes the exact or near exact same statement regarding the teaching with no additional explanation.

Applicant appreciates the hard work of the Examiner in thoroughly examining Applicant's application. However, Applicant respectfully requests that any citation to purported teachings of a reference be supported by specific citation to the exact language in the reference that supports the purported teachings. Without this information the Examiner has not supported a *prima facie* case of obviousness.

The deferential judicial review under the Administrative Procedure Act does not relieve the agency (in this case the Examiner) of the obligation to develop an evidentiary basis for its findings. To the contrary, the Administrative Procedure Act reinforces this obligation. See, e.g., *Motor Vehicle Manufacturers Ass'n v. State Farm Mutual Automobile Ins. Co.*, 463 U.S. 29, 43 (1983) ("the agency must examine the relevant data and articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made.'") (quoting *Burlington Truck Lines v. United States*, 371 U.S. 156, 168 (1962). In this respect, the Examiner has not provided the requisite detail regarding the basis for the rejection of the claims.

Further, in *In re Sang Lee*, 277 F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002) the CAFC recently reiterated the need to provide an evidentiary basis for the Examiner's finding. Appellant submits that the Examiner has failed to provide support that the cited references teach or suggest the elements of the claims. Nor has the Examiner supported any hint or suggestion in Lupien, Tertitski, Kane or Buist to support the alleged combinations. Therefore, Applicant respectfully requests reconsideration and withdrawal of the rejections of claims 30-33, 35 and 37-46.

VIII. Conclusion

In view of the above-presented discussion, Applicant believes that the rejected claims are patentably distinguishable over the art cited by the Examiner. Accordingly, Applicant respectfully requests that this Board reverse the final rejection of Claims 30-33, 35 and 37-46.

Respectfully submitted,

Dated: 8/12/2005

By _____
Dean W. Amburn, Reg. No. 46,517

HARNESS, DICKEY & PIERCE
P.O. Box 828
Troy, Michigan 48303
(248) 641-1600

IX. APPENDIX

Claims on Appeal

1. (Withdrawn) An automated securities trading system comprising:

means for formulating decision models for securities;

means for monitoring real-time market data;

means for automatically generating a transaction order in response to said data and said decision models; and

means for transmitting the transaction order to a market computer.

2. (Withdrawn) An automated securities trading system as recited in claim 1 wherein said decision model comprises:

a plurality of levels linked to others of said plurality of levels by Boolean-type logic operators;

said levels containing a plurality of components;

said components comprising market data or functions of market data; and,

decision points for said components.

3. (Withdrawn) An automated securities trading system as recited in claim 1 wherein said means for transmitting an order comprises means for placing a buy order, a sell order, a sell short order and a buy to cover order.

4. (Withdrawn) An automated securities trading system as recited in claim 1 further comprising means for receiving market data and storing said market data in a database to be used in the component portion of a decision model.

5. (Withdrawn) An automated securities trading system as recited in claim 1 further comprising means for receiving and storing historical data.

6. (Withdrawn) An automated securities trading system as recited in claim 1 further comprising means for initiating a floating stop loss process.

7. (Withdrawn) An automated securities trading system as recited in claim 1 further comprising means for recording the transaction upon execution of the transaction.

8. (Withdrawn) An automated securities trading system as recited in claim 1 further comprising means for monitoring the status of a transaction order prior to execution of the transaction order.

9. (Withdrawn) An automated securities trading system as recited in claim 1 wherein said means for automatically generating a transaction order comprises:

means for generating a transaction order selected from a group consisting of a market order, bid, ask, preference, SOES order, and limit order;

means for determining which transaction order of said group to submit to the market by considering the group consisting of factors from price momentum, price advantage, availability of shares and activities of market makers;

means for submitting the order to an Internet brokerage; and,

means for submitting the order directly to the market and to electronic communication networks.

10. (Withdrawn) An automated securities trading system comprising:

a network;

a market computer coupled to said network;

a market information computer coupled to said network; and

a computer for formulating a decision model for the security; monitoring real-time market data, in response to market data for the security and the decision model, automatically generating a transaction order, and transmitting the transaction order to a market computer.

11. (Withdrawn) An automated securities trading system as recited in claim 10 wherein said network comprises the Internet.

12. (Withdrawn) An automated securities trading system as recited in claim 10 wherein said decision model comprises at least one level having one or more components.

13. (Withdrawn) An automated securities trading system as recited in claim 10 wherein said components are selected from the group consisting of price, volume, bids, asks, spread, number of shares at each price level of bid or ask, time of posting of each bid or ask, time of sales and number of shares sold, and actions of market makers.

14. (Withdrawn) An automated securities trading system as recited in claim 10 wherein said computer records the transaction upon execution of the transaction.

15. (Withdrawn) An automated securities trading system as recited in claim 10 wherein said computer monitors the market data and cancels an order if the market data as processed by the decision models indicates a trade is undesirable.

16. (Withdrawn) An automated securities trading system as recited in claim 10 wherein said market computer and said market data computer are integral.

17. (Withdrawn) An automated securities trading system as recited in claim 10 wherein said market computer and said market information computer are accessed through a common source.

18. (Withdrawn) An automated securities trading system as recited in claim 17 wherein said common source is an Internet brokerage.

19. (Withdrawn) A method for trading a security comprising the steps of:

formulating a decision model for the security having a component portion;

monitoring real-time market data;

in response to market data for the security and said decision model, automatically generating a transaction order; and

transmitting the transaction order to a market computer.

20. (Withdrawn) A method as recited in claim 19 further comprising the steps of recording the transaction upon execution of the transaction.

21. (Withdrawn) A method as recited in claim 19 wherein said transaction order is selected from the group consisting of a buy order, a sell order, a sell short order, and a buy to cover order.

22. (Withdrawn) A method as recited in claim 19 wherein the step of formulating a decision model comprises the step of weighting data used in the component portion of the decision models.

23. (Withdrawn) A method as recited in claim 22 wherein said step of weighting comprises the step of assigning a function of market data to allow combining a weighted data component with one or more other weighted data components.

24. (Withdrawn) A method as recited in claim 19 wherein the step of formulating a decision model comprises the step of establishing an intersection or interaction of data to be used in the component portion of the decision model, said intersection or interaction accomplished by assigning a function of market data to a component so that it can be measured against another component.

25. (Withdrawn) A method as recited in claim 19 wherein the step of formulating a decision model comprises the step of establishing a component to produce a singular value, said singular value being a function of security or market data.

26. (Withdrawn) A method as recited in claim 19 further comprising the steps of;

monitoring the transaction order until the order is filled;

monitoring the market data; and

canceling the transaction order if the market data or decision models indicate a trade is undesirable.

27. (Withdrawn) A method as recited in claim 19 further comprising the step of establishing a floating stop loss level.

28. (Withdrawn) A method as recited in claim 24 wherein said floating stop level comprises a dynamic floating stop loss.

29. (Withdrawn) A method as recited in claim 19 further comprising the step of testing decision models prior to entering into transactions by processing data through decision models and making pseudo transactions that are recorded in the transaction database.

30. A method for trading a security through a network accessible brokerage, comprising:

receiving from a client of the network accessible brokerage at least one computer implemented decision model for the security wherein the decision model comprises a mathematical function for receiving data and providing at least one value wherein the at least one value is compared to a decision point for deciding to buy or sell the security;

inputting data into the decision model;

computer implemented monitoring the decision model for the decision to buy the security wherein monitoring the decision model comprises comparing. the at least one value to the decision point;

in response to monitoring said decision model, automatically generating a buy transaction order for the security; and

automatically transmitting the buy transaction order to a market computer;

after the step of transmitting the buy transaction, monitoring the decision model;

in response to monitoring said decision model, automatically generating a sell transaction order for the security; and

automatically transmitting the sell transaction order to the market computer.

31. A method as recited in claim 30 wherein the step of generating a transaction order comprises after the step of generating a sell order;

monitoring the sell order until the order is filled;

monitoring the decision model; and

canceling the sell order if the decision model indicates a trade is undesirable.

32. A method as recited in claim 30 further comprising after the step of transmitting the buy transaction order to the market computer:

confirming the buy transaction;

initiating a floating stop loss;

monitoring the floating stop loss for a stop loss decision to sell the security;

if a stop loss decision to sell is reached then automatically transmitting a stop loss sell transaction order for the security to the market computer.

33. A method as recited in claim 32 wherein said floating stop loss comprises a dynamic stop loss.

34. (Withdrawn) An automated securities trading system coupled to a market computer and a data source computer comprising:

an Internet trading computer coupled to the market computer and the data source computer; and

a user terminal coupled to said Internet trading computer;

said Internet trading computer programmed to store decision models input through said user terminals, said Internet trading computer monitoring real-time market data and in response to said market data, automatically generating a transaction order and transmitting said transaction order to said market computer.

35. A process for automated trading of a security through a brokerage computer system in communication with a client computer system, comprising:

providing a brokerage having a brokerage computer system for transacting orders to buy and sell securities, wherein the brokerage computer system is in communication with a plurality of client computer systems;

receiving to the brokerage computer system from the client computer system at least one computer implemented buy decision model for the security;

receiving to the brokerage computer system from the client computer system at least one computer implemented sell decision model for the security;

providing a computer implemented monitoring process on the brokerage computer system for monitoring the decision models for a buy decision and/or a sell decision;

providing a computer implemented transaction approval process on the brokerage computer system for determining after the decision to buy and/or sell the security is made if a transaction to buy or sell the security is appropriate;

providing a computer implemented transaction submission process on the brokerage computer system for submitting a transaction to buy or sell the security to a market computer system and monitoring the transaction until it is completed;

inputting data into the buy decision model and the sell decision model wherein the data comprises data for the security wherein the data is input into the decision models at the brokerage computer system;

monitoring the decision models through the monitoring process for the buy decision and/or the sell decision;

if the buy decision is reached then determining through the transaction approval process if a buy transaction is appropriate and if so then automatically submitting to a

market computer system through the transaction submission process an order to buy the security;

if the sell decision is reached then determining through the transaction approval process if a sell transaction is appropriate and if so then automatically submitting to a market computer system through the transaction submission process an order to sell the security; and

continuing inputting data into the decision models, monitoring the decision models through the monitoring process, and repeating the steps if the buy decision is reached or the sell decision is reached until the process is stopped.

36. (Withdrawn) The automated process for trading a security of claim 35, wherein the transaction approval process, the transaction submission process, the buy decision model, and the sell decision model are on a computer system for a network accessible brokerage wherein the buy decision model and the sell decision model are provided to the network accessible brokerage through a client computer system in communication with the network accessible brokerage.

37. A process for automated trading a security through a network accessible brokerage in communication with a client comprising the steps of:

a. providing a network accessible brokerage comprising a brokerage computer system;

b. accepting to the brokerage computer system from the client one or more computer implemented decision models for a security wherein the one or more decision

models comprise logic for deciding to buy the security and logic for deciding to sell the security;

c. providing on the brokerage computer system a computer implemented monitoring process for monitoring the one or more decision models for a decision to buy the security and/or a decision to sell the security;

d. providing on the brokerage computer system a computer implemented transaction approval process for determining if a transaction to buy or sell the security is appropriate once the decision to buy or the decision to sell has been made;

e. providing on the brokerage computer system a computer implemented transaction submission process for submitting the transaction to buy or sell the security to a market computer system and monitoring the transaction until it is completed;

f. inputting data into the one or more decision models, wherein the data is input into the one or more decision models until the process is stopped;

g. monitoring the one or more decision models using the monitoring process, for the decision to buy and/or the decision to sell;

h. if the decision to buy or the decision to sell is reached then determining using the transaction approval process if a buy or sell transaction is appropriate and if so then automatically submitting using the transaction submission process an order to buy or sell the security; and

i. iteratively repeating above steps g. and h. until the process is stopped.

38. The process of claim 37 wherein the decision model comprises a moving average calculation of at least a portion of the data.

39. The process of claim 37 wherein the decision model comprises a weighted data process.

40. The process of claim 37, further comprising:

after the steps of submitting an order to buy the security and monitoring the transaction until it is completed, automatically initiating a floating stop loss process for selling the security wherein either the floating stop loss process or the decision model can reach a decision to sell the security.

41. The floating stop loss of claim 40 wherein the floating stop loss is a dynamic floating stop loss.

42. The process of claim 37 further comprising the step of validating the data before the step of inputting the data into the decision model.

43. The process of claim 37 wherein the decision model further comprises logic to sell short the security and logic to buy to cover the security.

44. An automated trading system for trading securities through an network accessible brokerage, the automated trading system comprising:

at least one client computer in communication with the automated trading system via the network wherein the client computer is operated by a client computer user;

at least one computer implemented decision model for deciding whether to buy or sell a security wherein the decision model comprises a mathematical function for receiving data and providing at least one value wherein the at least one value is compared to a decision point for deciding to buy or sell the security, wherein the at least one decision model enters a state comprising a buy state and a sell state;

a data input processor for receiving data from a data source and inputting the data into the decision model;

a computer implemented decision monitor for monitoring the state of the at least one decision model;

a computer implemented transaction approval processor for determining if a transaction to buy or sell the security is appropriate if the at least one decision model enters the buy state and/or the sell state; and

a computer implemented transaction submission processor for submitting a transaction to buy or sell the security if approved by the transaction approval processor, wherein the decision monitor continuously monitors the at least one decision model and the security is repeatedly bought and sold based on the state of the at least one decision model and the determination of the transaction approval processor.

45. The automated trading system of claim 44, wherein the logic of the decision model is defined by the user.

46. The automated trading system of claim 44, wherein the logic of the decision model comprises a moving average.

X. APPENDIX - EVIDENCE

Figures 1-11	-	entered February 9, 2000
Substitute Specification	-	entered May 5, 2003
Office Action	-	entered March 26, 2004
Office Action	-	entered December 16, 2004

SUBSTITUTE SPECIFICATION ATTACHMENT

METHOD AND APPARATUS FOR AUTOMATED TRADING OF EQUITY SECURITIES USING A REAL TIME DATA ANALYSIS

TECHNICAL FIELD

[0001] The present invention relates generally to automated systems for trading securities, and more specifically to an apparatus and method for automatically buying and selling equity securities based on market trends in response to pre-established decision models for the particular security.

BACKGROUND

[0002] A group of investors called day traders typically trade securities throughout the trading day. Day trading may be a hobby or rise to the level of a career. Unlike long term investors, day traders seek to capitalize on incremental trends in the price of securities throughout the trading day.

[0003] Day trading involves careful monitoring of a security and deciding whether to buy or sell based on intraday movements of the price and the trend of the security. Successful day trading depends on the ability to recognize a trend and the market momentum therein, timely execution of a buy or sell order, and a determination of when to forego a transaction.

[0004] There are different methods of day trading. One popular method is to track and trade highly volatile securities by attempting to buy when the security price is moving up or sell short when the security price is moving down. Various other sources of information besides price, such as volume, are often considered in deciding to enter

into a transaction. Technical analysis of stock prices tell us that prices tend to move in trends, volume of traded securities corresponds with the trends, and a trend once established has momentum and tends to continue in force.

[0005] Some of the data that day traders monitor in order to determine a trend include: price; bids; asks; spread between the inside bid/ask; and the number of shares on the bid or ask side. Other general market data may also be considered such as futures contracts, economic indicators and financial news sources such as CNBC.

[0006] Day traders tend to focus on a very small number of stocks relative to the entire stock market. Day traders commonly monitor real-time data presented on the trader's computer screen. One difficulty in day trading is analyzing the large volumes of available data. Timely deciding whether to enter into a transaction is critical. Delays of a few seconds can make the difference in catching a trend near the start, middle or end.

[0007] Another problem with day trading is the ability to enter appropriate buy/sell orders quickly and to have them executed. That is, once a decision is made, the order should be placed before the market fluctuates much. Many day traders monitor multiple data sources then must format an appropriate buy or sell order. Particularly if multiple events occur, a significant amount of time may lapse.

[0008] Another method of day trading is to monitor a specific stock that usually makes little movement in price during the trading day. A day trader may attempt to exploit a spread between a prevailing bid and ask to make a small profit. This method requires repeatedly buying and selling the security. The profits are typically on the order of 1/16 or 1/8 of a point. Stopping losses by quickly exiting a transaction that is not profitable is crucial. This method of trading is commonly referred to as scalping.

[0009] Various known systems for automatic transactions have been proposed in the prior art. Some systems are intended to create an automated market for securities. Two such systems are disclosed in U.S. Patents 5,950,176 and 4,674,044. These systems automate a security market by taking buy and sell orders from several sources and setting a price based on supply and demand.

[0010] Other systems are intended to manage large investor portfolios or for use by institutional investors. For example, U.S. Patent 5,101,353 and other patents are commonly used for large institutional investors. Such systems allow institutions to anonymously buy and sell large blocks of securities. The system is somewhat automated in that buy and sell orders at specific prices are communicated to the markets where they are executed. However, the analyzing of the price and the determination of orders is operated by a registered investment advisor. The system is used to match internal buy and sell orders before placing market orders.

[0011] Other known systems are used in a similar fashion. That is, buy and sell orders are manually placed. Thus, the systems are only partially automated. Further, many of these systems are particularly suited for institutional trading.

[0012] Institutional investors, retail brokerage houses and private corporations may also participate in program trading. Program trading as defined by the New York Stock Exchange® ("NYSE") involves the simultaneous buying and selling of at least 15 different stocks with a market value of $1,000,000 or more. Program trading is designed to take advantage of the inefficiencies in the market between stock prices and futures or options contracts. Program trading is typically just price based. The bulk

trading of stocks or options are executed at different times under strict market rules. These types of systems are inherently different and not available to day traders.

[0013] It would therefore be desirable to provide a system available to day traders that is capable of quickly entering into buy and sell transactions to take advantage of market momentum.

SUMMARY OF THE INVENTION

[0014] It is therefore one object of the invention to automatically buy, sell or sell short equity securities. It is a further object of the invention to quickly identify and react to trends or momentum in price movement for a security. Another object of the invention is to provide a system that both buys securities on the identification of a trend and sells securities automatically when the end of the trend is determined.

[0015] The present invention provides a method for buying and selling securities based on volatility and liquidity rather than commonly used stock fundamentals. In one aspect of the invention, a method for trading a security comprises the steps: formulating a decision model for the security; monitoring real-time market data; in response to the market data for the security and the decision model, automatically generating a transaction order; and transmitting the transaction order to a market computer.

[0016] One feature of the invention is that it allows the system operator to develop decision models. The decision models are not limited to variations of traditional technical analysis but instead can include novel analysis of data.

[0017] Another feature of the invention is that after an order is placed, the transaction may be monitored until execution. Until the transaction has been executed the decision model is monitored to determine whether to cancel the order.

[0018] A further feature is related to how a transaction is reversed once initiated. For example if a security is bought it can be sold through a decision model to sell or through a floating stop loss process.

[0019] In a further aspect of the invention, an automated securities trading system comprises a computer for formulating a decision model for the security. The computer is coupled to a network and receives real-time market data. The computer automatically generates a transaction order in response to the market data based upon the decision model. The computer places the order.

[0020] One advantage of the invention is that if the system is used to monitor multiple securities, different decision models may be used for each. Another advantage of the invention is that both buy and sell orders may be automatically executed by the system so that the orders are processed quickly to take advantage of price trends and momentum in the market as desired by day traders.

[0021] A further feature and advantage of the invention is that it may monitor real-time data and make decisions to buy or sell on a moment by moment basis. Several securities may be concurrently monitored through the decision models and transacted on a moment by moment basis.

[0022] Other objects and features of the present invention will become apparent when viewed in light of the detailed description of the preferred embodiment when taken in conjunction with the attached drawings and appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0023] The present invention will become more fully understood from the detailed description and the accompanying drawings, wherein:

[0024] Figure 1 is a block diagrammatic view of a trading system according to the present invention.

[0025] Figure 2 is a high level system flow chart according to the present invention.

[0026] Figure 3 is a block diagram of data entry for the system according to the present invention.

[0027] Figure 4 is a flow chart for data input validation according to the present invention.

[0028] Figure 5 is a data and analysis decision flow chart according to the present invention.

[0029] Figure 6 is a decision point flow chart according to the present invention.

[0030] Figure 7 is a transaction portion of a flow chart.

[0031] Figure 8 is an order preparation flow chart according to the present invention.

[0032] Figure 9 is an order execution preference chart according to the present invention.

[0033] Figure 10 is a floating stop loss flow chart according to the present invention.

[0034] Figure 11 is a block diagrammatic view of an alternative embodiment of a trading system suitable for an on-line brokerage system.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0035] In the following figures like reference numerals are used to identify identical components in the various views. The following example is meant to be illustrative of a preferred method for implementing the automated trading securities system. However, those skilled in the art will recognize various alternative embodiments. For example, various decision models using various security or market data may be implemented.

[0036] Referring now to Figure 1, an automated securities trading system 10 is illustrated. The automated trading system 10 has a personal computer (PC) 12 that is coupled to a network 14. Network 14 is coupled to a data source computer 16 and a market computer 18. The automated trading system 10 may also be remotely accessed through the network 14 by another computer including a PC, hand held computer or a laptop computer 20.

[0037] Personal computer 12 is the most likely implementation of the present invention. However, other computing systems such as mainframes or minicomputers may also be used.

[0038] Personal computer 12 has a central processing unit (CPU) 24 with memory 26. Memory 26 includes: random access memory (RAM); read only memory (ROM); flash or cache memory; a hard drive; and other data storage devices. Various data and a program for operating the present invention may reside in memory 26. CPU

24 has an interface 28 that is used to couple personal computer 12 to network 14. Various operating systems known to those skilled in the art may be used to operate personal computer 12. CPU 24 operates the software in conjunction with input devices such as a keyboard 30 and a mouse 32. Various data are displayed on a monitor 34. A printer 36 coupled to computer 12 is used to print displayed information and reports, from computer 12.

[0039] Network 14 is illustrated as hard wire connections between computer 12, data source 16 and market computer 18. Network 14 may, for example, be the Internet, or other network known to those skilled in the art. Interface 28 represents the connection to the network 14. Interface 28 may include but is not limited to a dial up modem, a cable modem, an ISDN line, a DSL line, a T1 line, or various other data lines and connectors known to those skilled in the art. Interface 28 may also include but is not limited to: wireless connections such as through satellites; high data rate wireless technology (HDR); or wireless phone networks.

[0040] Although illustrated as a single wide area network (WAN), the present invention may be implemented using several networks including a local area network (LAN). For example, both a WAN and a LAN may be used. For a LAN, a client/server network may be used having various numbers of client workstations connected thereto. The client/server network may be coupled to a WAN such as the Internet.

[0041] Data source 16 is illustrated as a single source. However, data source 16 represents a variety of potential data sources. Computer 12 may be used to select desired information from the variety of data sources. Data source 16 preferably provides real-time security data. Although, this real-time security data may also be

provided together with historical data. Data source 16 specifically may provide National Association of Securities Dealers Automated Quotation System ("NASDAQ") level II data or similar data. NASDAQ level II data provides detailed information about the current market for a specific security. Level II data includes details about bids, and asks, as well as the identity of the market maker for the bid/ask and numbers of shares offered. Also, the numbers of shares and the time that they were sold is also provided.

[0042] Sources for data such as NASDAQ level II are available through several third-party vendors including: Bridge; S & P Comstock; and, eSignal. Data source 16 may include but is not limited to any of the above sources.

[0043] The present invention is intended to work with various types of market computers 18. For example, the present invention preferably is configured to allow communication with the NYSE, NASDAQ, and various electronic communication networks (ECN) such as ISLAND. Market computer 18 may be an Internet brokerage as well. Market computer 18 accepts preformatted security orders and implements the transaction as soon as the market will accept it. A confirmation is provided by market computer 18 upon the actual transaction being completed. A preferred embodiment of the market computer will allow for direct access electronic trading (DAET).

[0044] Data source 16 and market computer 18 may coexist at a common location. For example, data source 16 and market computer 18 may exist together at an Internet brokerage. Data source 16 and market computer 18 may also be integral meaning they exist as one computer system, for example the NASDAQ computer system or the NYSE computer system. Alternatively, data source 16 and market computer 18 may exist at different locations and be accessed by different means. For

example, interface 28 for the data source 16 may be a satellite connection. At the same time interface 28 for the exchange computer 18 may be an Internet connection through a telephone modem.

[0045] Referring now to Figure 2, a high-level flow chart of the operation of the present invention is illustrated. In block 40, data for selected stocks are input and analyzed. The identity of securities to transact and associated decision models are taken from database 42 and stored in memory 26 for processing in step 40 by computer 12. Block 44 provides a source for real-time stock data. The data may be obtained from data source 16. Real-time data from block 44 may eventually become part of historical databases 42 for use in decision models.

[0046] In block 46 orders are prepared and submitted. The orders may include buy orders, sell orders, sell short and buy to cover orders. These orders are prepared in response to the real-time data for selected stocks from step 40 and based upon the formulated decision models therein. These transactions are prepared and formatted in CPU 24. The orders are transmitted to a brokerage or directly to an exchange 48. In response to executed orders, a transaction database 50 may be used to store historical data for transactions of the system.

[0047] Referring now to Figure 3, to initialize the system, a database of security data 51 and a system database 52 is constructed. Computer 12 in block 54 prompts the user for security symbols to monitor as well as various information about each security. The prompted information will generate the decision model for the various securities. Examples of information to be input in block 54 include: the number of levels of decision; the relationship of levels; the components and databases; the

relationship between components; various equations; decision points; the number of shares to buy or limits therein; the holding period; various circuit breakers; exchange preferences; and, any additional data deemed significant in the operation of the system. As part of this process various databases 56, 58, and 60 can be established to receive and store security data to be used in components. Once a decision model is established it can be applied to any security. The system will offer the operator the option of selecting or modifying decision models provided with the system. Each area of additional information is discussed in greater detail below.

[0048] 1. Number of levels of decision

[0049] A "level" refers to a separate grouping of components in the decision process. There must be at least one level and there may be several but in most applications only a few will be appropriate. The user enters a number of levels of decision from 1 to n.

[0050] For example one level may be selected with two components therein. Alternatively, four levels can be used with the first two using a single component and the next two using three and four components respectively. Nearly an unlimited number of combinations are available.

[0051] In the decision process a level will return a true or false value. A level returns a true or false value depending on whether the components have reached their decision points or range.

[0052] 2. Relationship of the levels

[0053] The relationship between levels is a decision process as it relates to the levels. In general, a Boolean operation such as AND, OR, NOT will be used to

compare the levels for making a decision. For example a decision model could have two levels with the following relationship: Level 1 <AND> Level 2. An alternative model could employ three levels with the following relationship: (Level 1 <OR> Level 2) <NOT> Level 3. The user will have virtually unlimited discretion in the relationship of levels.

[0054] 3. Components and databases

[0055] A "component" can be an element of data or an assigned function of data for a security, or market in general. With few exceptions the security data of interest is dynamic and available in real-time. Security data includes but is not limited to its: price; volume; bids; asks; spread; number of shares at each price level of bid; number of shares at each price level of ask; time and sales; actions of market makers or specialists. Market data includes but is not limited to the following: NASDAQ volume or level; S&P futures volume or level; and Dow volume or level. There can be more than one function of a certain data type.

[0056] For example, a component may be a function of volume traded for a security. Another component could be a function of how close the current price is to the inside bid or ask. A third component may be a function of the S&P futures. A fourth component may be based on tracking the activities of market makers. One of several ways this may be done is to assign a value to each of the finite number of market makers. A component may then be developed to track the activities of market makers including their offers or bids. The group of components available is only limited by the data accessible for a specific security or market.

[0057] A component can also be a function of historical data retrieved from a database for a security. Component databases 56, 58, 60 illustrate the databases that can be established for creating a source for component data. To create a component database, the user defines the data or function of data that is placed in the database. Any of the available security data that can be incorporated into a component may be placed in a component database. For example, a component could relate to the volume of shares traded and number of trades made at a specific price level. This type of component database may be used to identify support and resistance levels. A component may then be established to anticipate buying or selling pressure based on the database for how actively the security was traded in the past as the security approached a certain price level.

[0058] As illustrated, several component databases 58, 59 and 60 can be established for each level in the decision model. A virtually unlimited number of component databases can be established for each separate decision model.

[0059] In a preferred embodiment, a selection from an offering of the most commonly used components and component databases may be offered. Other components or functions of data may be customized.

[0060] 4. Relationship of components

[0061] There are several ways of defining a relationship between the components on each level. These include but are not limited to the following: 1. weighted data summation; 2. interaction or intersection; and, 3. singular values.

[0062] Each level can combine more than one component. In the intersection or interaction relationship the components may have a relationship that allows them to

be combined to produce a net result. For example, one component may be a moving average of price for the preceding thirty ticks of data. Another component may be a moving average of price for the preceding ten ticks. A relationship may then be established where if one moving average crosses the other, then the condition (buy, sell, etc.) for the level has been met.

[0063] In the weighted data format the components are assigned equations that gives weight to the data. For example, one level could have three components. The first component may be a measure of volume. The second component may be a measure of price change. The third component may be a measure of how close the price is to the inside bid or ask. A relationship may then be established where the volume component is 20% of the total, the measure of price change may be 30% of the total, and the spread 50% of the total. This means no matter how high the volume goes it can only contribute 20% to the total deciding factor.

[0064] A significant value of this method is that it allows a combining of data that does not easily lend itself to comparison. It also allows for creating a sliding scale for each component that when combined produces a sliding scale of the total where no one component exclusively controls the net result.

[0065] 5. Equations or formulas

[0066] Each component may be assigned an equation that works as a function of security data. The assigned equation serves more than one purpose. First, the equation may be a function of the data that gives it meaning. Second, the equation in the weighted data relationship may establish a continuum between low and high

values. Third, in the weighted data format it may be used to give a weight to the data that can then be combined with other weighted data to give a combined result.

[0067] The user may be given options of equations for a component as part of the component selection process. Alternatively, a customized equation may be entered.

[0068] 6. Decision points

[0069] A decision point refers to the moment data entered into a component reaches a predetermined level that satisfies the users criteria, in that component, for making the decision to buy, sell, sell short or buy to cover. A decision point may be a number, range of numbers or interaction between functions. For example a decision point may be when the price of a security increases by 1/8 point. It may also be when the average volume falls within a certain range. In addition a decision point could be when two different trailing averages intersect. The user has wide discretion in the definition of decision points.

[0070] As illustrated in block 62 information will be requested for input to system database 52. Block 62 may prompt the user for various pieces of data with respect to the overall system. For example, block 62 may prompt the user for system circuit breaker, brokerage and account information, the access method to the brokerage or to the exchange, the access method to the real-time data for securities, and any other system information.

[0071] Other information about the total number of shares that the system should buy or sell short may be used. It also tells the system how many shares should be bought or sold in a single transaction.

[0072] In block 54 information about holding periods, circuit breakers, exchange preferences and additional data will also be requested. Holding period refers to issues such as whether to hold a security overnight or have a mandatory sell at the end of the day.

[0073] Circuit breakers refer generally to trigger points that require a halt in part or all trading. An example may be when the system executes too many trades in a given time period. Another example of a circuit breaker is when the system achieves a level of draw down (loss of capital) that is not acceptable. Several circuit breakers may be offered.

[0074] Exchange preferences refer to user defined preferences for the particular exchange to use and the type of order to execute. For example all trading could be limited to one ECN such as ISLAND or spread around to several. In addition the order to buy could be always at the market or at the inside bid. Several options will be available.

[0075] As illustrated in block 62 there are several areas of information requested including: system circuit breakers; brokerage and account information; access method to brokerage; access method to real-time data; and, additional information.

[0076] System circuit breakers apply similar types of consideration as the circuit breakers for specific securities as discussed above. An example could be the maximum amount of draw down for the system including all securities being traded. Another example of a circuit breaker may be an event such as the markets shutting down. Several circuit breakers will be offered.

[0077] Information about brokerage, account and access to data will tell the system the parameters it must work under for buying and selling securities and accessing data.

[0078] Referring now to Figure 4, a flow chart of the system is illustrated continuing through Figure 8. Step 418 requests the securities data and market data to be monitored. The securities to request data for are identified in the security database 419 (as input in step 54). The data is requested from a data source in step 420. This is the same source as data source computer 16 of Figure 1. The security and market data from step 420 is raw data as illustrated in step 421. The raw data is compared to historical data in step 422 to verify that the data is in a valid range. If the data is outside of a valid range, then the same security data is requested again in step 420.

[0079] If the data is valid, the process continues in Figure 5 at step 523, where data is entered in the component equations and databases. Step 523 will receive the identity of component equations and component databases for the corresponding securities to be traded from database 524. Data entered may also be saved in a component database in step 525. The flow of data into decision models and component databases is continuous.

[0080] Step 526 illustrates the process of calculating the results of the data in the components of the decision models and comparing the results to decision points as will be further discussed below.

[0081] As a result of step 526 a decision may be made to buy, sell, sell short or buy to cover a security. This is illustrated in steps 527, 528, 529, 530. The decision to buy, for example, is available for a specific security if the user selected that option

and selected a buy decision model for the security. If a buy, sell, sell short or buy to cover order is not appropriate pursuant to a decision model then the system continues to monitor the decision models in process 526. The system will continue processing data through the input and decision models until the system is halted by the operator or by other system parameters.

[0082] If a decision is made to buy, sell, sell short or buy to cover then the system will proceed to step 531 where additional considerations are taken into account before a transaction is entered into. The embodiment of the process in step 531 is discussed in greater detail in Fig. 7 below. This step looks at whether to proceed based on several factors.

[0083] Step 531 checks to determine whether or not the transaction is appropriate. Information from a database 532 of security data including transaction limits, exchange and order preferences may be used in this process. Usually these parameters are input to the database prior to entering automatic transaction mode. In step 533, the appropriateness of the transaction is determined. If the transaction is not appropriate the process is returned to step 526. If the transaction is determined as appropriate, step 534 is executed.

[0084] Step 534 determines the best order type and which exchange to be used. For example, an order may be placed on more than one exchange. In step 535, the order is sent to the appropriate exchange or exchanges and an entry is made in the transaction database in step 536. In step 537, the system determines whether or not timely confirmation has been received. If no confirmation has been received, then step 538 may be executed wherein orders are resubmitted and checked for errors. After

step 538, step 535 resubmits the order to the exchange or cancels the order if necessary. Referring back to step 534, during the ordering process, the system process flow may simultaneously return back to step 526 and send the order to the exchange in step 535. This allows the further processing of the decision models while the order is being processed. Back in step 526, if the decision points or ranges have not been reached then an order may be cancelled if it has not been executed.

[0085] Referring now to Figure 6, the logic of step 526 is illustrated in more detail. Figure 6 provides one example of a decision model for a buy decision. A similar example applies to a decision model for a sell decision, sell short decision, or a buy to cover decision. Figure 6 is one example of countless variations of a decision model. Step 638 illustrates Level 1 of the decision model. As discussed in reference to Figure 3 there can be one or several levels in the decision model. Steps 639 and 640 illustrate the possible addition of Level 2 and Level 3. Step 638 illustrates a weighted data summation format for the components in Level 1. This is but one of the several options for defining the relationship between the components for Level 1.

[0086] As illustrated in step 638, for Level 1 to be TRUE requires that the sum of the weighted data be greater than or equal to its decision level. An example of process 638 is as follows:

[0087] If $\Sigma f(\text{Comp\_1})$ to $f(\text{Comp\_n}) \geq \text{DPoint1}$ then Level 1 is TRUE

[0088] In this example $f(\text{Comp\_1})$ represents a function of security data for Component 1. Additional functions of security data for components are represented by $f(\text{Comp\_n})$. The decision point for Level 1 is represented by the variable DPoint1.

[0089] As illustrated in process 639, for Level 2 to be TRUE requires that there be intersection or interaction between the components. An example of process 639 is as follows:

[0090] If f(Comp_1) ≥ f(Comp_2) then Level 2 is TRUE

[0091] In this example the functions of Component 1 and Component 2 are compared. One example may be when moving average of data is compared to another moving average.

[0092] As illustrated in process 640, for Level 3 to be TRUE requires that a component reach a specific value. An example of process 640 is as follows:

[0093] If f(Comp_1) = DPoint3 then Level 3 is TRUE

[0094] The above examples are illustrative of the different types of relationships available for each level of a decision model. There are unlimited variations as to the number of Levels in a decision model and the number and type of components at each level. The above example illustrates one of many options available.

[0095] Step 641 represents the final step of the decision model where the results of the separate levels are combined in an IF ... THEN Boolean logic type operation. If the result of operation 641 is true then the system will proceed to step 527 where the system will proceed to prepare and submit a buy order for the security. For example, if there are three levels and the relationship in step 641 is represented as Level 1 <AND> Level 2 <NOT> Level 3 then for a buy decision to be made requires that both Level 1 and Level 2 have reached their decision point and Level 3 has not reached its decision point. If this occurs then the decision model will reach a buy decision.

[0096] Referring now to Figure 7, the logic that determines the appropriateness of a transaction for steps 531 and 533 is illustrated. Figure 7 illustrates the logic in the event of a buy decision as a result of process 526. Similar logic would apply in the event of a sell decision, sell short decision, and buy to cover decision. In step 742, if the security is already owned and the total to buy is not yet reached, then step 743 is executed. If the maximum number of transactions has not been reached, then step 744 is executed. If an operator defined level of draw down has not been reached, step 745 is executed if appropriate. In optional step 745, additional conditions may be required to be met to determine whether or not the transaction is appropriate. If all of the above are true, then step 533 indicates an appropriate transaction is reached. If in steps 742 through 745 the logic is no, then a transaction will not be entered for the particular security.

[0097] Referring now to Figure 8, the process for determining the best type of transaction from steps 535 is illustrated. In step 846, the best stock exchange is determined based on user preferences and the liquidity of the exchange for the security is determined. For example, one ECN may be desirable over another due to transaction costs or offering a better bid price. In step 847, the best method for order execution or as modified by user preferences may be determined. Step 847 looks to the price momentum, availability of shares and activities of market makers in determining the best method for order execution. In addition, step 847 will formulate an order that complies with established order rules for the exchange and order type to be used. Part of the information for steps 846 and 847 may be input from a database of security data that includes the preferences as pre-defined.

[0098] Referring now to Figure 9, an example of the logic in step 847 above that may apply to determining the type of order based on order type and price momentum. A chart illustrates various market momentums and buy, sell or sell short orders. Various order types include: bid which is either high or low; an offer which can be either high or low; a small order execution system (SOES) order; and, a preference order to a specific market maker. An example of a determination of what type of order to be executed is illustrated. For example, for a buy order, depending on the market momentum, that is a momentum increasing, decreasing or staying the same, a bid may be processed high or low, respectively. A preference to a specific market maker may be bid high. If the momentum is decreasing, a bid between the spread may be formed and if the momentum is flat a bid between the spread may be formed. Also, if the momentum is increasing or staying the same, a SOES order may be placed.

[0099] If a sell order is required and the momentum is increasing, decreasing or staying the same, an offer high, an offer low, or an offer high may be formed respectively. Alternatively, an offer between the spread, an offer preference low, or an offer between the spread may be formed. Also, a SOES order may be implemented if the momentum is decreasing or staying flat.

[0100] If a sell short order is determined and the momentum is increasing, decreasing or staying the same, an offer high or an SOES order on an uptick may be performed. Alternatively, an offer between the spread and an offer low on an uptick may be generated. If the price momentum is falling or flat an offer at a predetermined level above the current price may be offered on a downtick. For example, an offer of 1/16 above the price may be executed.

[0101] Referring now to Figure 10, a floating stop loss may also be used to determine when to sell or buy to cover a particular security. The floating stop loss illustrated in Figure 10 is different from that of a traditional stop loss. A floating stop loss is a feature of the instant invention's constant monitoring of the market for the security. Rather than the traditional method where a stop loss order for a specific amount is sent to the broker, a floating stop loss is accomplished when the system determines to exit the transaction and immediately sends an order for execution. Another distinct advantage of the floating stop loss is that it can follow the advance of a security and exit at the moment the stock turns down. A trading method can be developed where a security is bought according to a buy decision model and sold based on the floating stop loss rather than a sell model.

[0102] Step 1049 illustrates the basic concept of the floating stop loss when the security is owned. HPrice is a variable for the highest price for the security from the time of its purchase. CPrice is a variable for the security current price. BStop is a variable for the stop loss amount that the current price can differ from the highest price before requiring a sell order. In a floating stop loss BStop can be fixed at an amount such as 1/16th point and 1/4th point. In a dynamic floating stop loss BStop may be set to increase or decrease based on the continued increase in the security price. For example, BStop can be set to increase 1/16th point for every point increase in price.

[0103] Step 1050 illustrates a floating stop loss for a security sold short. In this step LPrice is a variable for the lowest price for the security from the time that it was sold short. CPrice is a variable for the security current price. SStop is the variable for

the stop loss amount. As in step 1049, SStop can be fixed at a specific amount for a floating stop loss or variable as the price decreases for a dynamic floating stop loss.

[0104] In step 1049 or step 1050 if the logic is no, step 1051 is executed. In step 1051, if there is no other reason to reverse the transaction then the logic loops back to step 1049 or step 1050 for further checking. Concurrent or parallel to this process the decision models continue to be monitored to determine if they dictate a reversal of the transaction. In step 1049 or step 1050 if the logic is yes, then step 534 is performed.

[0105] Referring now to Figure 11, an embodiment of the invention is illustrated. The present embodiment is suitable as an option for traders using a common source such as an Internet brokerage 1105. Internet brokerage 1105 has as resident on its computers' programs to implement the methods of the instant invention. Internet brokerage 1105 receives its market data from data source computers 1101 and connects to market computers 1103. Computers 1101 and 1103 may be implemented on the same computer system and may be integral. For example, computers 1101 and 1103 may be the common computer system of NASDAQ computers. Internet brokerage 1105 may include one or more mainframe computers or minicomputers with assorted microcomputers connected.

[0106] Servers 1107, 1109, 1111 represent a plurality of servers on the Internet connecting the Internet brokerage 1105 to the client computers 1113, 1115, 1117, 1119, 1121, and 1123. Client computers 1113, 1115, 1117, 1119, 1121, and 1123 may be of the type as described above. The client computers may also be "dumb" terminals such as a WebTV® device. Through their client computers the system users

will be able to establish the parameters of the trading as discussed above. However, in this embodiment most, if not all, of the processing of the decision models may take place at the Internet brokerage computers 1105. Information about transactions will be displayed at the client computers. One advantage to such a system is that because trades are automatically executed, one less link, i.e., to the end user and back, during execution is performed. Therefore, any time associated with that connection is eliminated when executing a trade. Because market momentum may be rapid, timely execution of trades may reduce cost and increase the overall profits of the transaction.

[0107] In operation, a predetermined number of securities are identified to the system. A decision model for each of the securities is determined. Real-time market data is monitored as well as information from the databases. In response to the market data for the security and the decision model, a transaction order is automatically generated. The system automatically transmits the transaction order to the market computer. During the process and before execution of the order, the order is continually monitored to determine if it is appropriate. If the transaction at any time before execution is determined to be inappropriate, the order may be canceled. In addition, the system may be run in a training mode allowing the decision models to be tested prior to actual implementation and actual trading.

[0108] While particular embodiments of the invention have been shown and described, numerous variations and alternate embodiments will occur to those skilled in the art. Accordingly, it is intended that the invention be limited only in terms of the appended claims.

ABSTRACT OF THE DISCLOSURE

A system and method for buying and selling securities based on volatility and liquidity rather than other fundamentals is demonstrated. The method involves: providing at least one decision model to buy and sell a security; inputting real-time data into the decision model; and automatically generating an order and executing transactions to buy and sell the security based in response to the decision model. The method continues in buying and selling the security based in response to decision model until the method is stopped.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-46* is/are pending in the application.

4a) Of the above claim(s) *1-29,34 and 36* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *30-33, 35, 37-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 16.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/17/2003 has been entered.

DETAILED ACTION

Claims 1-29, 34 and 36 are withdrawn.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 35 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not

described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Paper number 15, amendment (dated 12/17/2003) page 10 line 4 "unrelated client" is added which was not described in original specification, Examiner, is unable to find any reference to "unrelated client" or any suggestion, in original specification, to provide information for this limitation.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 30-33 and 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lupien et al US 5,845,266 (hereinafter Lupien) in view of Kane (US 6,317,728).

Re. Claim 30, Lupien discloses receiving from a client of the network accessible brokerage at least one computer implemented decision model (satisfaction density) for the security, and inputting data into the decision model [Lupien – see entire document particularly, Abs; C1 L24-L64; C4 L19-L36; C6 L29-L54], and in response to monitoring said decision model, automatically generating a sell transaction order, and automatically transmitting the sell transaction order to the market computer [Lupien – C6 L14-L54; C8 L5-L15, wrap the profile], and in response to monitoring said decision model, automatically generating a buy transaction order, and automatically transmitting the buy

transaction order to a market computer [Lupien – C4 L18-L60]. Lupien, explicitly does not disclose monitoring the decision model, and after the step of transmitting the buy transaction, monitoring the decision model. However, Kane discloses securities trading system for automatic day trading and monitoring the decision model, and after the step of transmitting the buy transaction, monitoring the decision model (decision logic, where decision logic having set of rules) [see entire document particularly, Abstract; Figures 1-2, 4-7, 13; C1 L4 to C3 L63; C4 L66 to C5 L57; C11 L45-L60; C18 L40-L45] to monitor and evaluating buy/sell and the rate of success and failure of each buy and sell rules (agents). Therefore, it would been obvious to one ordinary skill in the art at the time the applicant's invention was made to modify the disclosure of Lupien and include monitoring the decision model, as disclosed by Kane, to monitor and assign rating powers to buy/sell agents and improve the performance of the system.

Re. Claims 31-33, Lupien discloses canceling the sell order if the decision model indicates a trade is undesirable [C11 L1-L22; C19 L22-L40]. Lupien, explicitly, does not disclose wherein the step of generating a transaction order comprises after the step of generating a sell order, and monitoring the sell order until the order is filled, and after the step of transmitting the buy transaction order, establishing a floating stop loss (stop loss) level (position), and floating stop loss level comprises a dynamic (continuously) stop loss. However, Kane discloses these steps [C4 L66 to C5 L56; C1 L46 to C3 L62; C18 L20-L55; see ref. in claim 30] to evaluate a win or a loss. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to

modify the disclosure of Lupien and include step of generating order and monitoring to limit the losses.

Re. Claims 44-46, Lupien discloses at least one client computer (terminal) in communication with the automated trading system via the network wherein the client computer is operated by a client computer user [see Ref-to-Lupien above; Fig. 1, C6 L14-L39], and at least one computer implemented decision model for deciding whether to buy or sell a security wherein the decision model comprises logic for buying and selling the security, wherein the at least one decision model enters a state comprising a buy state and a sell state [see Ref-to-Lupien above; Abs; C1 L24-L64; C4 L19-L36; C6 L29-L54], and a data input processor for receiving data from a data source and inputting the data into the decision model [see Ref-to-Lupien above; C4 L19-L28], and a computer implemented transaction approval processor for determining if a transaction to buy or sell the security is appropriate if the at least one decision model enters the buy state and/or the sell state [see Ref-to-Lupien above; Abs], and a computer implemented transaction submission processor for submitting a transaction to buy or sell the security if approved by the transaction approval processor, wherein the decision monitor continuously monitors the at least one decision model and the security is repeatedly bought and sold based on the state of the at least one decision model and the determination of the transaction approval processor [see Ref-to-Lupien above; C6 L34 to C7 L5; C14 L52-L61], and wherein the logic of the decision model is defined by the user [see Ref-to-Lupien above; Abs], and wherein the logic of the decision model

comprises a moving average [see Ref-to-Lupien above]. Lupien. Explicitly, does not discloses a computer implemented decision monitor for monitoring the state of the at least one decision model. However, Kane discloses this step [Abstract] to monitor the securities and shield investor form loss and maximize the gain. Therefore, it would been obvious to one ordinary skill in the art at the time the applicant's invention was made to modify the disclosure of Lupien and include monitoring the decision model, as disclosed by Kane, to monitor securities in real time, executing buy, sell, sell short and buy to cover trades automatically.

Claims 35 and 37-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lupien in view of Kane (US 6,317,728) and Buist (US 6,408,282).

Re. Claim 35, Lupien discloses receiving at least one computer implemented buy decision model for the security, and receiving at least one computer implemented sell decision model for the security, and providing a computer implemented monitoring process for monitoring (observing) the decision models for a buy decision and/or a sell decision [Lupien – Abs; C1 L24-L64; C4 L19-L65; C8 L5-L59], and providing a computer implemented transaction approval process for determining if a transaction to buy or sell the security is appropriate [Lupien – Abs (accommodates stock exchange rules)], and providing a computer implemented transaction submission process for submitting a transaction to buy or sell the security to a market computer system and monitoring the transaction until it is completed [C8 L5-L15; C11 L1-L21], and inputting data into the buy

decision model and the sell decision model wherein the data comprises data for the security [C7 L15-L23], and if the buy decision is reached then determining through the transaction approval process if a buy transaction is appropriate and if so then automatically submitting through the transaction submission process an order to buy the security [C8 L5-L15; C11 L1-L21], and if the sell decision is reached then determining through the transaction approval process if a sell transaction is appropriate and if so then automatically submitting through the transaction submission process an order to sell the security [C8 L5-L15; C11 L1-L21], and continuing inputting data into the decision models, monitoring the decision models through the monitoring process, and repeating the steps if the buy decision is reached or the sell decision is reached until the process is stopped [Lupien- C14 L39-L67], and the transaction submission process, the buy decision model, and the sell decision model [C8 L5-L15; C11 L1-L21]. Lupien, explicitly, does not disclose monitoring the decision models through the monitoring process for the buy decision and/or the sell decision, providing a brokerage having a broker computer system for transacting orders to buy and sell securities, wherein the brokerage computer system is in communication with a plurality of client computer systems operated by a plurality of unrelated clients, receiving to the brokerage computer system from the client computer system, providing a computer implemented transaction approval process on the brokerage computer system for determining after the decision to buy and/or sell the security is made, and market computer system. However, Kane discloses a securities and/or commodities trading system (Intra-Day trading system), based on the principles of artificial intelligence, that includes a

computer arrangement communicating with a securities exchange, and has inputs for receiving buy and sell data and input communicating with the decision logic for executing buy and sell orders in conformance with the buy/sell rules, monitoring the decision models through the monitoring process for the buy decision and/or the sell decision and providing a computer implemented transaction approval process on the brokerage computer system (Fig. 1 device connected to # 20) for determining after the decision to buy and/or sell the security is made (execution logic with an executing logic the affirmed buy short order and transaction based on recommendations) and E-Trade [Kane – see entire document particularly, Abstract; C1 L20 to C3 L51; C5 L1-L65; C7 L17-L67; C10 L65 to C11 L60; claim 8 (decision models = agents)] to monitor the performance of transaction to minimize the risk. Further, Buist discloses computer-aided trading of financial instruments, trading of securities over the Internet, collecting, receiving, disseminating or displaying system orders, executing system orders and providing a brokerage having a broker computer system (Fig. 1 # 42) for transacting orders to buy and sell securities, wherein the brokerage computer system is in communication with a plurality of client computer systems (Fig. 1 # 10) operated by a plurality of (unrelated) clients [see entire document particularly, Figures 1 (# 10, 42, 55, 12, 44), 2-3; 21 (# 2110, 2180), 22 (# 2210, 2265), 25; C1 L56-67; C2 L1-L3, L38-L45; C3 L1-L5, L15-16; C6 L25 to C9 L5; C31 L48-L66; Claim 1], receiving to the brokerage computer system (Fig. 1 # 42) from the client computer system (Fig. 1 # 10) [Fig. 1 # 12 connections], market computer system [Fig. 1 # 55] to provide Internet based securities trading. It is known that the broker's job is to monitor the market whether it is in person

or computerized monitoring tools to watch the market trend. Further, decision of trading securities is a function of the client to set the rules for buying/selling, either he/she has to enter the parameters into computer or explain it to his/her broker (authorize broker) and communicate his/her decision to broker (agent) to finalize the deal. Therefore, it would been obvious to one ordinary skill in the art at the time the applicant's invention was made to modify the disclosure of Lupien and include monitoring the decision models through brokerage network, and describe the system architect of on-line (Internet or day-trading) as discloses by Kane and Buist, to provide system view and system monitoring capability using user interface (GUI) or automatic evaluating decision logic to monitor a portfolio of stocks in real time which can shield an investor from loss while maximizing gain.

Re. Claim 37, Lupien discloses b. accepting one or more computer implemented decision models for a security wherein the one or more decision models comprise logic for deciding to buy the security and logic for deciding to sell the security [Lupien: Abs; Fig. 1-2, 4-7, 11; C1 L24-L64; C2 L45-L65; C3 L23-L36; C4 L18 to C5 L34; C6 L L29-L65; C8 L5-L59; C11 L12-L21; C14 L53-L61; C19 L3-L45 = Ref-to-Lupien], and d. providing a computer implemented transaction approval process for determining if a transaction to buy or sell the security is appropriate once the decision to buy or the decision to sell has been made [see Ref-to-Lupien above], and e. providing a computer implemented transaction submission process for submitting the transaction to buy or sell the security to a market computer system and monitoring the transaction until it is

completed [Ref-to-Lupien above], and f. inputting data into the one or more decision models, wherein the data is input into the one or more decision models until the process is stopped [see Ref-to-Lupien above], and h. if the decision to buy or the decision to sell is reached then determining using the transaction approval process if a buy or sell transaction is appropriate and if so then automatically submitting using the transaction submission process an order to buy or sell the security [see Ref-to-Lupien], and ~~h~~ i. iteratively repeating above steps f. and g. until the process is stopped [see Ref-to-Lupien above; C6 L34 to C7 L5; C14 L52-L61]. Lupien, explicitly, does not disclose providing a computer implemented monitoring process for monitoring the one or more decision models for a decision to buy the security and/or a decision to sell the security; monitoring the one or more decision models using the monitoring process, for the decision to buy and/or the decision to sell; providing a network accessible brokerage comprising a broker computer system; brokerage computer system from the client; providing on brokerage computer system. However, Kane discloses these steps: providing a computer implemented monitoring process for monitoring the one or more decision models (agents) for a decision to buy the security and/or a decision to sell the security [Kane US 6,317,728 – see entire document particularly, Abs; C1 L20 to C3 L51; C5 L1-L65; C7 L17-L67; C10 L65 to C11 L60 = Ref-to-Kane], and monitoring the one or more decision models using the monitoring process, for the decision to buy and/or the decision to sell [see Ref-to-Kane above] to monitor the performance of transaction to minimize the risk. Further, Buist discloses computer-aided trading of financial instruments, trading of securities over the Internet, collecting, receiving, disseminating

or displaying system orders, executing system orders and a. providing a network accessible brokerage comprising a broker computer system [figure 1, # 12, 44 & 42]; the brokerage computer system (Fig. 1 #42) from the client (Fig. 1 # 10); providing on brokerage computer system (Fig. 1 3 42) [C1 L56-67; C2 L1-L3, L38-L45; C3 L1-L5, L15-16; C6 L25 to C9 L5; C31 L48-L66; Claim 1] to provide Internet based securities trading. Therefore, it would been obvious to one ordinary skill in the art at the time the applicant's invention was made to modify the disclosure of Lupien and include monitoring the decision models through brokerage network, as discloses by Kane and Buist, to provide trading network and decision agent to monitor a portfolio of stocks in real time which can shield an investor from loss while maximizing gain.

Re. Claims 38-39, Lupien discloses wherein the decision model comprises a moving average calculation of at least a portion of the data [see Ref-to-Lupien above (average price=aggregate average price)], and wherein the decision model comprises a weighted data process [see Ref-to-Lupien; C2 L62-L67; C23 L1-L20].

Re. Claims 40-43 Lupien, explicitly, does not disclose after the steps of submitting an order to buy the security and monitoring the transaction until it is completed, automatically initiating a floating stop loss process for selling the security wherein either the floating stop loss process or the decision model can reach a decision to sell the security, and wherein the floating stop loss is a dynamic floating stop loss, and the step of validating the data before the step of inputting the data into the decision model, and

further comprises logic to sell short the security and logic to buy to cover the security. However, Kane discloses these steps: after the steps of submitting an order to buy the security and monitoring the transaction until it is completed, automatically initiating a floating stop loss (stop loss order) process for selling the security wherein either the floating stop loss process or the decision model can reach a decision to sell the security, and wherein the floating stop loss is a dynamic (monitoring stocks continuously) floating stop loss [see Ref-to-Kane above; C2 L22-L34], and the step of validating the data before the step of inputting the data into the decision model [see Ref-to-Kane above; C7 L34-L67; C13 L25-L65], and further comprises logic to sell short the security and logic to buy to cover the security [see Ref-to-Kane above; C3 L20-L58]. Therefore, it would been obvious to one ordinary skill in the art at the time the applicant's invention was made to modify the disclosure of Lupien and include stop loss, validating, and selling short to protect oneself from loss and make money on the way up and more on the way down.

Response to Arguments

4. Applicant's arguments with respect to claim30-33, 44-46, 35, 37-43 have been considered but are moot in view of the new ground(s) of rejection. Lupien et al deficiencies that examiner points out have been over come by secondary references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention and it has been held that a prior art reference must either be in the field of applicant's endeavor or be reasonably pertinent to the particular problem.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 CFR ' 1.111 (c) to consider the references fully when responding to this action.

US 6,247,000 to Hawkins et al, Jun. 12, 2001 "Method and system for confirmation and settlement for financial transactions matching orders" discloses method and system for automatically matching financial transactions that are electronically traded among various user groups, and in particular to a method and device for automatically matching securities electronically traded among brokers. An overview of the financial transaction (trading) system architecture, broker workstation (computer), LAN network and interface.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harish T Dass whose telephone number is 703-305-4694. The examiner can normally be reached on 8:00 AM to 4:50 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung S Sough can be reached on 703-308-0505. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

Harish T Dass HTD
Examiner
Art Unit 3628

March 18, 2004

HYUNG SOUGH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600

Notice of References Cited	Application/Control No. 09/500,624	Applicant(s)/Patent Under Reexamination AMBURN, DEAN	
	Examiner Harish T Dass	Art Unit 3628	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6,247,000 B1	06-2001	Hawkins et al.	705/37
*	B	US-6,408,282	06-2002	Buist, Walter D.	705/37
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

BEST AVAILABLE COPY

FORM HDP-1449 (Based on Form PTO-1449)

U.S. PATENT AND TRADEMARK OFFICE

INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Sheet 1 of 1

ATTORNEY DOCKET NO.	SERIAL NO.
2425-000001	09/500,624
APPLICANT	
Dean Amburn	
FILING DATE	GROUP
February 9, 2000	3628

U.S. PATENT DOCUMENTS

Ref. Desig.	Examiner's Initials	Document Number	Date	Name	Class/ Subclass	(If appropriate) Filing Date
1.	HTD	5,297,032	03/1994	Trojan et al.		

FOREIGN PATENT DOCUMENTS

Ref. Desig.	Examiner's Initials	Document Number	Date	Country	Class/ Subclass	Translation Yes	No
1.							

OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, etc.)

Ref. Desig.	Examiner's Initials	
1.	HTD	Technical Analysis of Stock Trends by Robert D. Edwards and John Magee, 7th Ed., dated 1998
2.	↓	Trading as a Business by Charlie F. Wright, dated 1998
3.	↓	Digital Day Trading: Moving from One Winning Stock Position to the Next by Howard Abell, dated 1999
4.		Computerized Trading: Maximizing Day Trading and Overnight Profits by Mark Jurik (editor), dated 1998

Examiner:	Harish Dass	Date Considered:	3/16/04

EXAMINER: Please initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

2425-0077 6AB

Final OA

Office Action Summary	Application No.	Applicant(s)
Due 3/16/05	09/500,624	AMBURN, DEAN
	Examiner	**Art Unit**
	Harish T Dass	3628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-46* is/are pending in the application.

4a) Of the above claim(s) *1-29, 34 and 36* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *30-33,35 and 37-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-29, 34 and 36 are withdrawn.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 30 and 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lupien et al (hereinafter Lupien - US 5,845,266) in view of Tertitski et al (hereinafter Tertitski - US 6,493,681).

Re. Claim 30, Lupien discloses receiving from a client of the network accessible brokerage at least one computer implemented decision model (satisfaction density) for the security wherein the decision model comprises a mathematical function for receiving data and providing at least one value wherein the at least one value is compared to a decision point for deciding to buy or sell the security, and inputting data into the decision model [see entire document particularly, Abstract; C1 L24-L64; C4 L19-L36; C6 L29-L54], in response to monitoring said decision model, automatically generating a sell transaction order for the security, and automatically transmitting the sell transaction order to the market computer [C6 L14-L54; C8 L5-L15, wrap the profile], and in response to monitoring said decision model, automatically generating a buy transaction

order for the security, and automatically transmitting the buy transaction order to a market computer [C4 L18-L60]. Lupien does not explicitly disclose computer implemented monitoring the decision model for the decision to buy the security wherein monitoring the decision model comprises comparing the at least one value to the decision point. However, Tertitski discloses these steps [Abstract; Figures 2-5; C1 L20 to C2 L47; C3 L10 to C4 L10; C4 L50 to C5 L32; claims] to provide day trade recommendation using formula, calculation and best strategy. Therefore, it would been obvious to one ordinary skill in the art at the time the applicant's invention was made to modify the disclosure of Lupien and include monitoring, decision model for decision to buy securities and comparison, as disclosed by Tertitski, to provide buy, sell or hold recommendation of securities.

Re. Claims 44-46, Lupien discloses at least one client computer (terminal) in communication with the automated trading system via the network wherein the client computer is operated by a client computer user [Abstract; Figure 1; C1 L24-L64; C6 L14-L54; C8 L5-L15], and at least one computer implemented decision model for deciding whether to buy or sell a security wherein the decision model comprises, wherein the at least one decision model enters a state comprising a buy state and a sell state [Abstract; C1 L24-L64; C4 L19-L36; C6 L29-L54], and a data input processor for receiving data from a data source and inputting the data into the decision model [C4 L19-L28], and a computer implemented transaction approval processor for determining if a transaction to buy or sell the security is appropriate if the at least one decision

model enters the buy state and/or the sell state [C1 L24-L64; C6 L14-L54; C8 L5-L15], and a computer implemented transaction submission processor for submitting a transaction to buy or sell the security if approved by the transaction approval processor, wherein the decision monitor continuously monitors the at least one decision model and the security is repeatedly bought and sold based on the state of the at least one decision model and the determination of the transaction approval processor [C1 L24-L64; C6 L14-L54; C8 L5-L15; C6 L34 to C7 L5; C14 L52-L61], and wherein the logic of the decision model is defined by the user [C1 L24-L64; C6 L14-L54; C8 L5-L15; C6 L34 to C7 L5; C14 L52-L61], and wherein the logic of the decision model comprises a moving average [C1 L24-L64; C6 L14-L54; C8 L5-L15; C6 L34 to C7 L5; C14 L52-L61]. Lupien, does not explicitly discloses a computer implemented decision monitor for monitoring the state of the at least one decision model and mathematical function for receiving data and providing at least one value wherein the at least one value is compared to a decision point for deciding to buy or sell the security, However, Tertitski discloses these step [Abstract; Figures 2-5; C1 L20 to C2 L47; C3 L10 to C4 L10; C4 L50 to C5 L32; claims] to provide day trade recommendation using formula, calculation and best strategy. Therefore, it would been obvious to one ordinary skill in the art at the time the applicant's invention was made to modify the disclosure of Lupien and include monitoring, decision model for decision to buy securities and comparison, as disclosed by Tertitski, to provide buy, sell or hold recommendation of securities.

Claims 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lupien and Tertitski, as applied to claim 30 above, and further in view of (Kane (US 6,317,728).

Re. Claims 31-33, Lupien discloses canceling the sell order if the decision model indicates a trade is undesirable [C11 L1-L22; C19 L22-L40]. Lupien, does not explicitly disclose wherein the step of generating a transaction order comprises after the step of generating a sell order, monitoring the sell order until the order is filled, monitoring the decision model, after the step of transmitting the buy transaction order to the market computer, confirming the buy transaction, initiating a floating loss, and monitoring the floating stop loss for a stop loss decision to sell the security, and if a stop loss decision to sell is reached then automatically transmitting a stop loss sell transaction order for the security to the market computer, and floating stop loss comprises a dynamic stop loss. However, after the step of transmitting the buy transaction order to the market computer and confirming the buy transaction, initiating a floating loss are known. Further Tertitski discloses monitoring the decision model, monitoring the floating stop loss for a stop loss decision to sell the security, and if a stop loss decision to sell is reached then automatically transmitting a stop loss sell transaction order for the security to the market computer [Abstract; Figures 2-5; C1 L20 to C2 L47; C3 L10 to C4 L10; C4 L50 to C5 L32; claims] to provide day trade recommendation using formula, calculation and best strategy. Additionally, Kane discloses wherein the step of generating a transaction order comprises after the step of generating a sell order, monitoring the sell

order until the order is filled and floating stop loss comprises a dynamic (continuously) stop loss [C4 L66 to C5 L56; C1 L46 to C3 L62; C18 L20-L55; claim 30] to execute buy and sell orders in conformance with the buy/sell rules. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the disclosure of Lupien and include step of generating order and monitoring the decision model, monitoring the floating stop loss, as disclosed by Tertitski and Kane, to trade securities based of sound decision model and rules.

Claims 35 and 37-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lupien in view of Kane (US 6,317,728) and Buist (US 6,408,282).

Re. Claim 35, Lupien discloses receiving at least one computer implemented buy decision model for the security, and receiving at least one computer implemented sell decision model for the security, and providing a computer implemented monitoring process for monitoring (observing) the decision models for a buy decision and/or a sell decision [Lupien – Abs; C1 L24-L64; C4 L19-L65; C8 L5-L59], and providing a computer implemented transaction approval process for determining if a transaction to buy or sell the security is appropriate [Lupien – Abs (accommodates stock exchange rules)], and providing a computer implemented transaction submission process for submitting a transaction to buy or sell the security to a market computer system and monitoring the transaction until it is completed [C8 L5-L15; C11 L1-L21], and inputting data into the buy decision model and the sell decision model wherein the data comprises data for the

security [C7 L15-L23], and if the buy decision is reached then determining through the transaction approval process if a buy transaction is appropriate and if so then automatically submitting through the transaction submission process an order to buy the security [C8 L5-L15; C11 L1-L21], and if the sell decision is reached then determining through the transaction approval process if a sell transaction is appropriate and if so then automatically submitting through the transaction submission process an order to sell the security [C8 L5-L15; C11 L1-L21], and continuing inputting data into the decision models, monitoring the decision models through the monitoring process, and repeating the steps if the buy decision is reached or the sell decision is reached until the process is stopped [Lupien- C14 L39-L67], and the transaction submission process, the buy decision model, and the sell decision model [C8 L5-L15; C11 L1-L21]. Lupien, explicitly, does not disclose monitoring the decision models through the monitoring process for the buy decision and/or the sell decision, providing a brokerage having a broker computer system for transacting orders to buy and sell securities, wherein the brokerage computer system is in communication with a plurality of client computer systems, receiving to the brokerage computer system from the client computer system, providing a computer implemented transaction approval process on the brokerage computer system for determining after the decision to buy and/or sell the security is made, and market computer system and wherein the data is input into the decision model at the brokerage computer system. However, Kane discloses a securities and/or commodities trading system (Intra-Day trading system), based on the principles of artificial intelligence, that includes a computer arrangement communicating with a

securities exchange, and has inputs for receiving buy and sell data and input communicating with the decision logic for executing buy and sell orders in conformance with the buy/sell rules, monitoring the decision models through the monitoring process for the buy decision and/or the sell decision and providing a computer implemented transaction approval process on the brokerage computer system (Fig. 1 device connected to # 20) for determining after the decision to buy and/or sell the security is made (execution logic with an executing logic the affirmed buy short order and transaction based on recommendations) and E-Trade [Kane – see entire document particularly, Abstract; C1 L20 to C3 L51; C5 L1-L65; C7 L17-L67; C10 L65 to C11 L60; claim 8 (decision models = agents)] to monitor the performance of transaction to minimize the risk. Further, Buist discloses computer-aided trading of financial instruments, trading of securities over the Internet, collecting, receiving, disseminating or displaying system orders, executing system orders and providing a brokerage having a broker computer system (Fig. 1 # 42; C6 L25-L32) for transacting orders to buy and sell securities, wherein the data is input into the decision model (trade-decision-making) at the brokerage computer system [C1 L13 to C3 L63; C6 L25-L32], wherein the brokerage computer system is in communication with a plurality of client computer systems (Fig. 1 # 10) operated by a plurality of (unrelated) clients [see entire document particularly, Figures 1 (# 10, 42, 55, 12, 44), 2-3; 21 (# 2110, 2180), 22 (# 2210, 2265), 25; C1 L56-67; C2 L1-L3, L38-L45; C3 L1-L5, L15-16; C6 L25 to C9 L5; C31 L48-L66; Claim 1], receiving to the brokerage computer system (Fig. 1 # 42) from the client computer system (Fig. 1 # 10) [Fig. 1 # 12 connections], market computer system [Fig.

1 # 55] to provide Internet based securities trading system. It is known that the broker's job is to monitor the market whether it is in person or computerized monitoring tools to watch the market trend. Further, decision of trading securities is a function of the client to set the rules for buying/selling, either he/she has to enter the parameters into computer or explain it to his/her broker (authorize broker) and communicate his/her decision to broker (agent) to finalize the deal. Therefore, it would been obvious to one ordinary skill in the art at the time the applicant's invention was made to modify the disclosure of Lupien and include monitoring the decision models through brokerage network, and describe the system architect of on-line (Internet or day-trading) as discloses by Kane and Buist, to provide system view and system monitoring capability using user interface (GUI) or automatic evaluating decision logic to monitor a portfolio of stocks in real time which can shield an investor from loss while maximizing gain.

Re. Claim 37, Lupien discloses b. accepting one or more computer implemented decision models for a security wherein the one or more decision models comprise logic for deciding to buy the security and logic for deciding to sell the security [Lupien: Abs; Fig. 1-2, 4-7, 11; C1 L24-L64; C2 L45-L65; C3 L23-L36; C4 L18 to C5 L34; C6 L L29-L65; C8 L5-L59; C11 L12-L21; C14 L53-L61; C19 L3-L45 = Ref-to-Lupien], and d. providing a computer implemented transaction approval process for determining if a transaction to buy or sell the security is appropriate once the decision to buy or the decision to sell has been made [see Ref-to-Lupien above], and e. providing a computer implemented transaction submission process for submitting the transaction to buy or

sell the security to a market computer system and monitoring the transaction until it is completed [Ref-to-Lupien above], and f. inputting data into the one or more decision models, wherein the data is input into the one or more decision models until the process is stopped [see Ref-to-Lupien above], and h. if the decision to buy or the decision to sell is reached then determining using the transaction approval process if a buy or sell transaction is appropriate and if so then automatically submitting using the transaction submission process an order to buy or sell the security [see Ref-to-Lupien], and h. iteratively repeating above steps f. and g. until the process is stopped [see Ref-to-Lupien above; C6 L34 to C7 L5; C14 L52-L61]. Lupien, explicitly, does not disclose providing a computer implemented monitoring process for monitoring the one or more decision models for a decision to buy the security and/or a decision to sell the security; monitoring the one or more decision models using the monitoring process, for the decision to buy and/or the decision to sell; providing a network accessible brokerage comprising a broker computer system; brokerage computer system from the client; providing on brokerage computer system. However, Kane discloses these steps: providing a computer implemented monitoring process for monitoring the one or more decision models (agents) for a decision to buy the security and/or a decision to sell the security [Kane US 6,317,728 – see entire document particularly, Abs; C1 L20 to C3 L51; C5 L1-L65; C7 L17-L67; C10 L65 to C11 L60 = Ref-to-Kane], and monitoring the one or more decision models using the monitoring process, for the decision to buy and/or the decision to sell [see Ref-to-Kane above] to monitor the performance of transaction to minimize the risk. Further, Buist discloses computer-aided trading of financial

instruments, trading of securities over the Internet, collecting, receiving, disseminating or displaying system orders, executing system orders and a. providing a network accessible brokerage comprising a broker computer system [figure 1, # 12, 44 & 42]; the brokerage computer system (Fig. 1 #42) from the client (Fig. 1 # 10); providing on brokerage computer system (Fig. 1 3 42) [C1 L56-67; C2 L1-L3, L38-L45; C3 L1-L5, L15-16; C6 L25 to C9 L5; C31 L48-L66; Claim 1] to provide Internet based securities trading. Therefore, it would been obvious to one ordinary skill in the art at the time the applicant's invention was made to modify the disclosure of Lupien and include monitoring the decision models through brokerage network, as discloses by Kane and Buist, to provide trading network and decision agent to monitor a portfolio of stocks in real time which can shield an investor from loss while maximizing gain.

Re. Claims 38-39, Lupien discloses wherein the decision model comprises a moving average calculation of at least a portion of the data [see Ref-to-Lupien above (average price=aggregate average price)], and wherein the decision model comprises a weighted data process [see Ref-to-Lupien; C2 L62-L67; C23 L1-L20].

Re. Claims 40-43 Lupien, explicitly, does not disclose after the steps of submitting an order to buy the security and monitoring the transaction until it is completed, automatically initiating a floating stop loss process for selling the security wherein either the floating stop loss process or the decision model can reach a decision to sell the security, and wherein the floating stop loss is a dynamic floating stop loss, and the step

of validating the data before the step of inputting the data into the decision model, and further comprises logic to sell short the security and logic to buy to cover the security. However, Kane discloses these steps: after the steps of submitting an order to buy the security and monitoring the transaction until it is completed, automatically initiating a floating stop loss (stop loss order) process for selling the security wherein either the floating stop loss process or the decision model can reach a decision to sell the security, and wherein the floating stop loss is a dynamic (monitoring stocks continuously) floating stop loss [see Ref-to-Kane above; C2 L22-L34], and the step of validating the data before the step of inputting the data into the decision model [see Ref-to-Kane above; C7 L34-L67; C13 L25-L65], and further comprises logic to sell short the security and logic to buy to cover the security [see Ref-to-Kane above; C3 L20-L58]. Therefore, it would been obvious to one ordinary skill in the art at the time the applicant's invention was made to modify the disclosure of Lupien and include stop loss, validating, and selling short to protect oneself from loss and make money on the way up and more on the way down.

Response to Arguments

2. Applicant's arguments with respect to pending claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 CFR ' 1.111 (c) to consider the references fully when responding to this action.

Tradetrek.com, 03/03/2000 "Fundamental Analysis" Web page analyzes and generates P/E ratio - 1 page.

Tradetrek.com, 2/19/2000 "Day Trading Strategies" show stop-loss trading - 3 pages.

Trade Now Daily Bulletine, 1999 shows the stop-limit trading.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harish T Dass whose telephone number is 703-305-4694. The examiner can normally be reached on 8:00 AM to 4:50 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung S Sough can be reached on 703-308-0505. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Harish T Dass
Examiner
Art Unit 3628

12/3/04

HYUNG SOUGH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600

Notice of References Cited

Application/Control No.	Applicant(s)/Patent Under Reexamination	
09/500,624	AMBURN, DEAN	
Examiner	Art Unit	Page 1 of 1
Harish T Dass	3628	

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6,493,681 B1	12-2002	Tertitski et al.	705/36
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	Tradetrek.com, 03/03/2000 "Fundamental Analysis" Web page analyzes and generates P/E ratio - 1 page.
	V	Tradetrek.com, 2/19/2000 "Day Trading Strategies" show stop-loss trading - 3 pages.
	W	Trade Now Daily Bulletine , 1999 shows the stop-limit trading.
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

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Enter a symbol: go

Don't know the s

Quote Chart News Comment 5-Day Forecast 6-Month Target

Fundamental Analysis

Parameters

30-Year Treasury Yield (%)	
Short-term Inflation Rate (%)	
Sales Per Share	
Price/Earning	
DJIA Outlook (1 year)	

Recalculate

Market Price	N/A
6 Month Target	N/A
Implied Earning Growth Rate	N/A
Vs. S&P 500	
3-Month Beta	N/A
Risk	N/A
Exp. Return	N/A
Good Value?	N/A

Instructions

i. Enter a symbol and hit "Go" to retrieve default parameters.
ii. Review default parameters and make changes if necessary.
iii. Hit "Recalculate" to generate results.

WARNING: Fundamental Analysis Model tends to find high-P/E, high-flying stocks excessively over priced. For example, this model is not suitable for pricing some Internet stocks.

Day Trading Strategies

Back Next

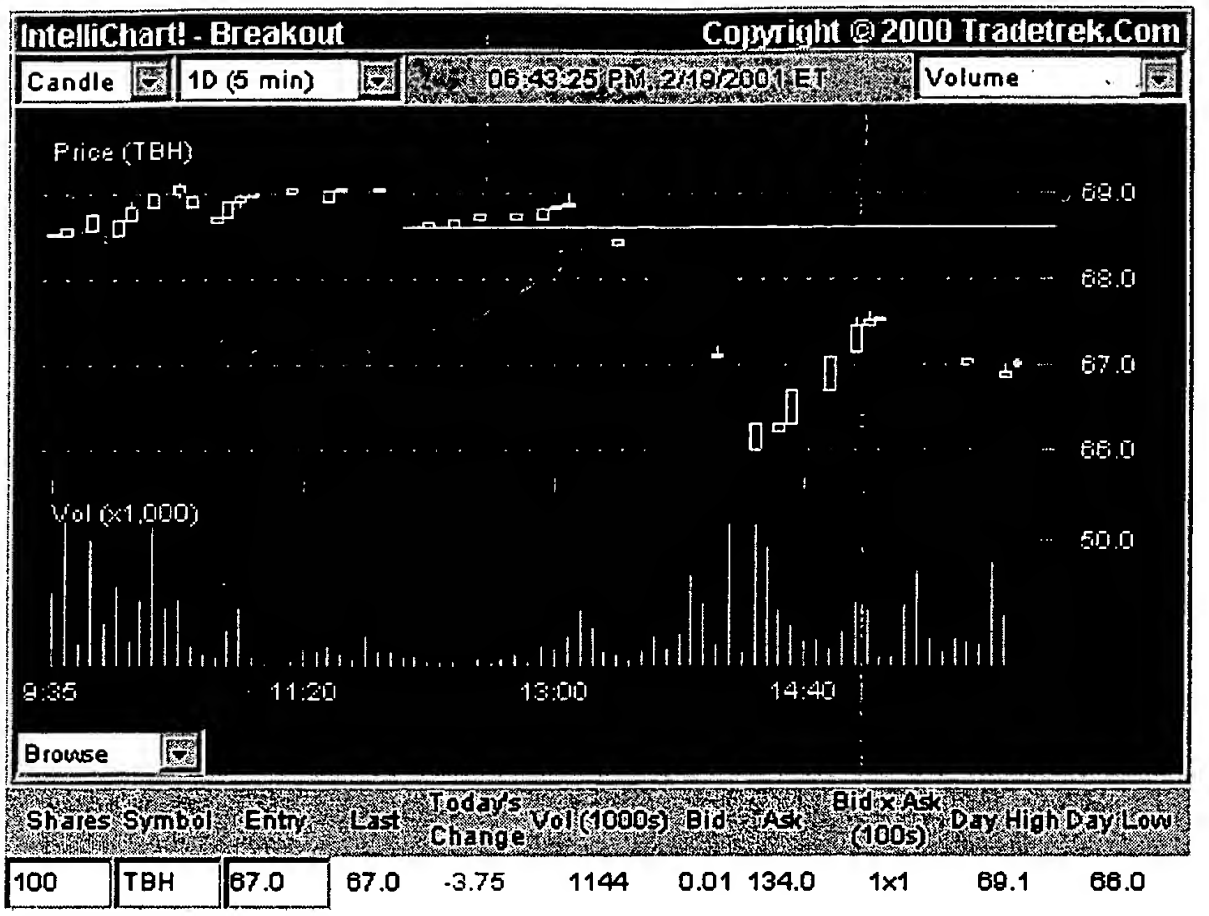
Strategy I: Breakouts

Breakout is one of the most effective and popular trading strategies. Experienced day traders do not buy or sell a stock before seeing indications that a stock may start a significant move. Then, monitoring a stock that has stayed in a narrow price range for some time (usually longer than 30 minutes or an hour), traders buy or sell the stock if it suddenly moves out of the range with significantly larger trading activities (larger volumes). The following charts are examples of breakouts picked by Tradetrek's "Day Trading Center:"

Analysis

ADSK shows a bullish BREAKOUT. The optimal entry level is 35.18 with a stop loss at 34.82

Figure 1. ADSK traded within a narrow range for about 3 hours until it breaks out with large volume at 14:25pm. Tradetrek picks up this bullish signal, as it presents itself-no delay--at 14:25 pm. The strategy is to buy the stock at a price near 35.18, right on the heels of the breakout, in hopes of taking profit at about 36.25, which is the most recent resistance level. In order to protect the down side, the trader should enter a stop loss order, right after the buy order is confirmed, to sell the stock at 34.82.



Analysis

TBH shows a bearish BREAKOUT. The optimal short level is 68.26 and stop-loss cover at 68.93.

Figure 2. TBH traded within a narrow range for about 3 hours until it breaks down with large volume at 13:15pm. Tradetrek picks up this bearish signal at 13:18pm. The strategy: to short sell the stock at a price near 68.26 right after the break, then aim to cover and take profit at about 67, which corresponds to a move about the size of the average daily range. To protect capital, traders should enter a stop loss cover order, right after the short sell order is confirmed, to buy the stock at 68.93.

By buying or selling the stock, then entering a stop loss order immediately afterwards, one will be stopped-out at a limited and controllable loss if a signal proves to be a false Breakout. Otherwise, one can wait until the stock price has stabilized at another trading range, then exiting at a profit. Again, of course, one should always remember Rule #1: always clear the position before the market closes.

Our computers at Tradetrek.com are constantly searching the entire market data-stream for Breakout trading opportunities, which we promptly display at Tradetrek's "Day Trading Center." We also provide, for the trader's reference, "optimal entry and cut-loss levels." These levels are derived from great numbers of historical back tests, such that traders who follow those rules would achieve optimal returns with minimum risks. Given the difficulty of calculating an optimal profit target, we do not provide one. There are, however, a few steps that a day trader can take to tailor an individual estimate. One useful reference is the average daily price range. In a single trading day, traders should not expect a profit much bigger than the size of the average daily price range. Following a breakout, if the trade is already making a profit comparable to the average daily price range, it is time to unwind the trade. Traders also choose to successively raise the stop loss level if the trade makes more and more money. In this way, they protect profits and keep the opportunities open for higher gains.

■ TradeNow! May 17 - 21 1999

Next Week
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Friday, May 21, 1999 Candidates

Symbol	Close	Buy Stop-Limit	Sell Stop-Limit	SPE
LEVL	46.938		46.00	46.50
LUV	31.750		31.50	32.00
TBFC	66.562		65.50	66.50
TERN	35.50		35.00	36.00
Expected Size of Investment: $89,000.00 ($8,900.00)				

Terminology:

Buy Stop Order (Stop Price) - an order to buy a security at the Stop Price which is higher than the current market quote

Sell Stop Order (Stop Price) - an order to sell the stock short at the Stop Price which is below the current market quote

SPE (Starting Point Of Exit) - Initially defined as the Stop Loss Price which is subsequently updated in accordance with the "Floating Stop Loss Rule"

Pos. Open - Actual price at which the position was opened

Pos. Close - Actual price at which the position was closed

NT (Not Triggered) - The position was never opened due to the Target Stop Price never having been reached

Thursday, May 20, 1999 Candidates

Symbol	Close	Buy Stop-Limit	Sell Stop-Limit	SPE
ANN	43.50		43.00	43.50
MHP	52.250		51.250	51.75
PVN	106.938		103.00	105
Expected Size of Investment: $98,625.00 ($9,863.00)				

Wednesday, May 19, 1999 Candidates

Symbol	Close	Buy Stop-Limit	Sell Stop-Limit	SPE
BJ	25.625		25.50	26.50
LOW	52.938		52.00	53.00
CREE	57.50	58.50		57.50
Expected Size of Investment: $68,000.00 ($6,800.00)				

Tuesday, May 18, 1999 Candidates

Symbol	Close	Buy Stop-Limit	Sell Stop-Limit	SPE
GD	65.25		64.75	66.00
JCI	64.438		64.00	64.50
STT	79.00		78.00	79.50
UTX	137.750		136.25	138.00
CUST	49.562	51.350		50.00
Expected Size of Investment: $197,175.00 ($19,718.00)				

Monday, May 17, 1999 Candidates

Symbol	Close	Buy Stop-Limit	Sell Stop-Limit	SPE
ANF	86.00		85.50	86.00
ETEK	39.250		37.50	38.50
Expected Size of Investment: $61,500.00 ($6,150.00)				

Next Week
Previous Week

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Stop Loss Placement

In day trading, a stop loss is a must. Before entering a trade, the trader must know precisely when he is getting out if the trade goes against him. For example, if a currency trading strategy calls for a stop loss to be placed below the low of the previous 30-minute bar on a long position, it must be done. A trader has to be very disciplined about this.

When exiting a trade with a loss depends on an indicator reaching a certain value or condition, the stop loss order cannot be placed right after the trade is entered. For example, in the basic explanation of the moving average crossover strategy, a long trade is entered when the short-term moving average crosses over the long-term moving average and it is exited and reversed (short trade established) when the short-term moving average crosses below the long-term one. Consequently, in a strategy like this a trader has to wait for a crossover before exiting a position. There are some other strategies where the exit point from a losing trade is a fixed amount or is based on a preexisting level on the chart. These are the strategies that I like teaching my students the most because the stops can be placed right after the trade is entered. For example, if I was using a day trading strategy where the exit point for a long trade due to a loss was one cent below the low of the previous 15-minute candle, then I could place a stop loss order right after I would enter the trade. Let's say that I bought 500 shares of XYZ at $25.20 and that the low of the previous 15-minute candle was 25.05. Right after buying the 500 shares I would instantly place a sell stop order at 25.04 (one cent below the low of the previous 15-minute candle). Thus, my stop would be in place at 25.04 and if the stock came down, I will exit at a price near 25.04. The reason why I like this type of strategy is because by forcing himself to place a stop loss order every time after entering a trade, a trader will be building discipline and learning to treat losses just like gains (becoming emotionally detached from his trades). By physically placing the stop, a trader won't run the risk of holding a losing position too long due to the use of discretion or because of fear.

A successful strategy must be very clear on where stops must be placed to limit a loss because even day traders using a mediocre strategy can be successful if they learn proper stop loss placement techniques. Since trading capital is the lifeblood of a day trader, he must protect every ounce it. The best way to do this is by knowing before entering where his exit point will be. Not only must the trading strategy provide the trader an entry with a higher probability of making money, but also with strategic and specific points to limit losses. These stops should keep the losses from bad trades at a manageable level and also be flexible enough to give winning trades room to grow.

In our day trading risk management section you will learn how much you can risk on every trade and how big your trading positions should be.

Day Trading Home

day trading strategy • trading stops • money management

XI. APPENDIX - RELATED PROCEEDINGS

No known related proceedings.

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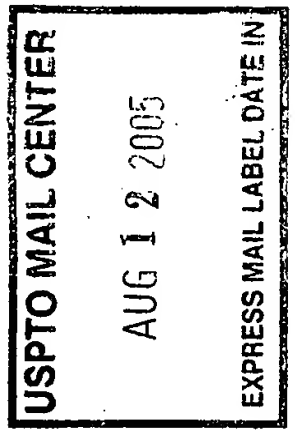

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PO ZIP Code	Day of Delivery ☐ Next ☐ 2nd ☐ 2nd Del. Day	Postage $	
Date Accepted Mo. Day Year	Scheduled Date of Delivery Month Day	Return Receipt Fee $	
Time Accepted ☐ AM ☐ PM	Scheduled Time of Delivery ☐ Noon ☐ 3 PM	COD Fee $	Insurance Fee $
Flat Rate ☐ or Weight lbs. ozs.	Military ☐ 2nd Day ☐ 3rd Day	Total Postage & Fees $	
	Int'l Alpha Country Code	Acceptance Emp. Initials	

DELIVERY (POSTAL USE ONLY)		
Delivery Attempt Mo. Day	Time ☐ AM ☐ PM	Employee Signature
Delivery Attempt Mo. Day	Time ☐ AM ☐ PM	Employee Signature
Delivery Date Mo. Day	Time ☐ AM ☐ PM	Employee Signature

☐ **WAIVER OF SIGNATURE** *(Domestic Mail Only)* **Additional merchandise insurance is void if waiver of signature is requested.** I wish delivery to be made without obtaining signature of addressee or addressee's agent (if delivery employee judges that article can be left in secure location) and I authorize that delivery employee's signature constitutes valid proof of delivery.

NO DELIVERY ☐ Weekend ☐ Holiday

Customer Signature

CUSTOMER USE ONLY

METHOD OF PAYMENT:

Express Mail Corporate Acct. No.

Federal Agency Acct. No. or Postal Service Acct. No.

FROM: (PLEASE PRINT) PHONE ( )

TO: (PLEASE PRINT) PHONE ( )

FOR PICKUP OR TRACKING: Visit **www.usps.com** or Call 1-800-222-1811

EMS